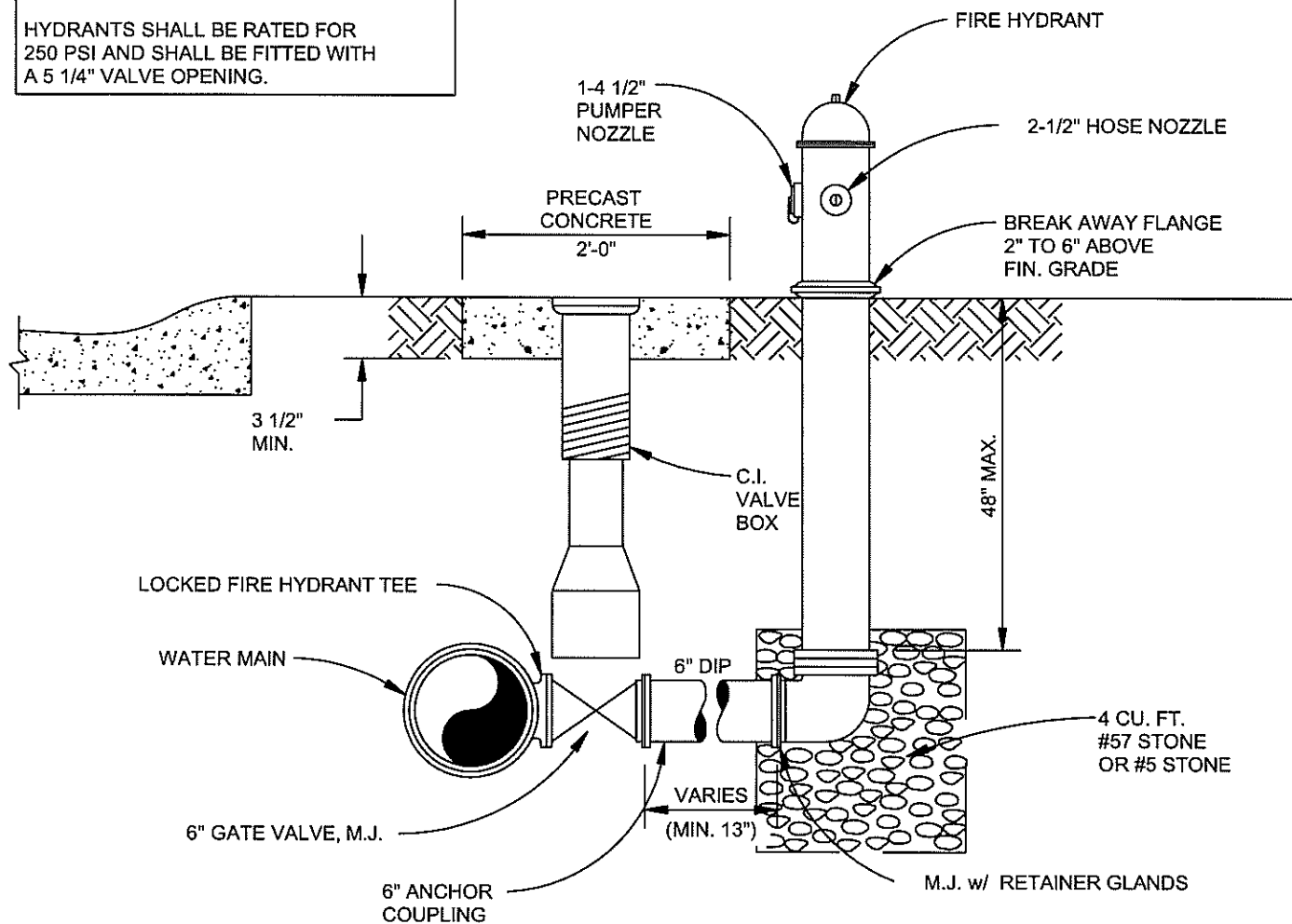


TYPICAL WATER MAIN AT CUL-DE-SAC

NOTE:
NO WATER SERVICE TAPS SHALL BE ALLOWED
ON THE DOWNSTREAM SIDE OF THE FIRE
HYDRANT (BETWEEN THE HYDRANT AND THE PLUG).

HYDRANTS SHALL BE RATED FOR 250 PSI AND SHALL BE FITTED WITH A 5 1/4" VALVE OPENING.

PAINT:
COLOR-SILVER REFLECTIVE
OUTDOOR RATED EPOXY



1. 4 1/2" PUMPER NOZZLE TO FACE STREET
2. HYDRANT NOT TO BE SET ON STREET SIDE OF WATER MAIN
3. VALVE BOX TO BE ADJUSTED TO GRADE
4. CONCRETE COLLAR AROUND VALVE BOX IF NOT IN PAVED AREA
5. GRAVEL TO BE PLACED AROUND HYDRANT DRAIN, MINIMUM DIMENSIONS 20" x 20" x 20"

TYPICAL FIRE HYDRANT INSTALLATION



TYPICAL FIRE HYDRANT INSTALLATION

Standard No.

401-02

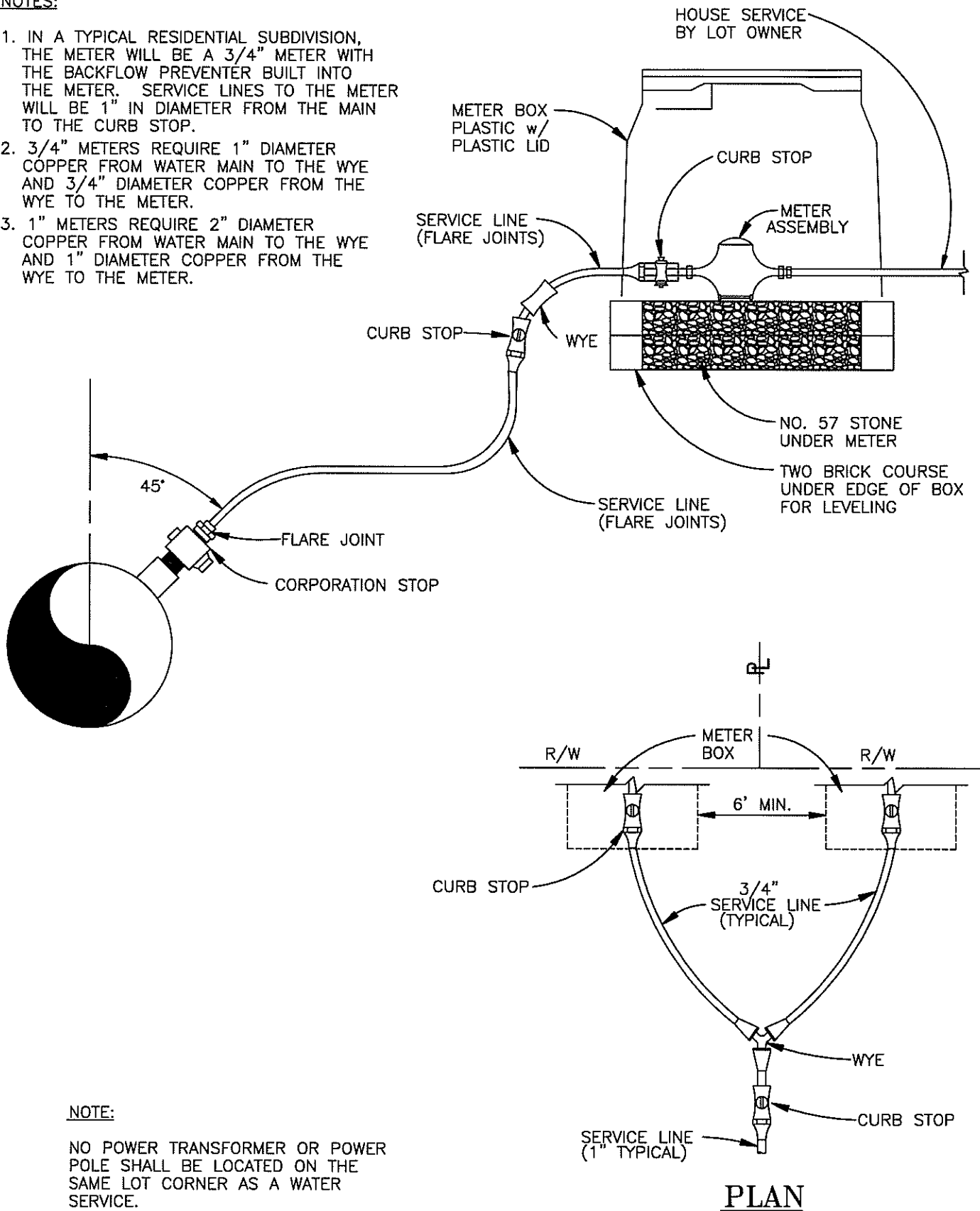


3/4" WATER METER
LOCATION
(FOR SUBDIVISIONS)

Standard No.
401-03

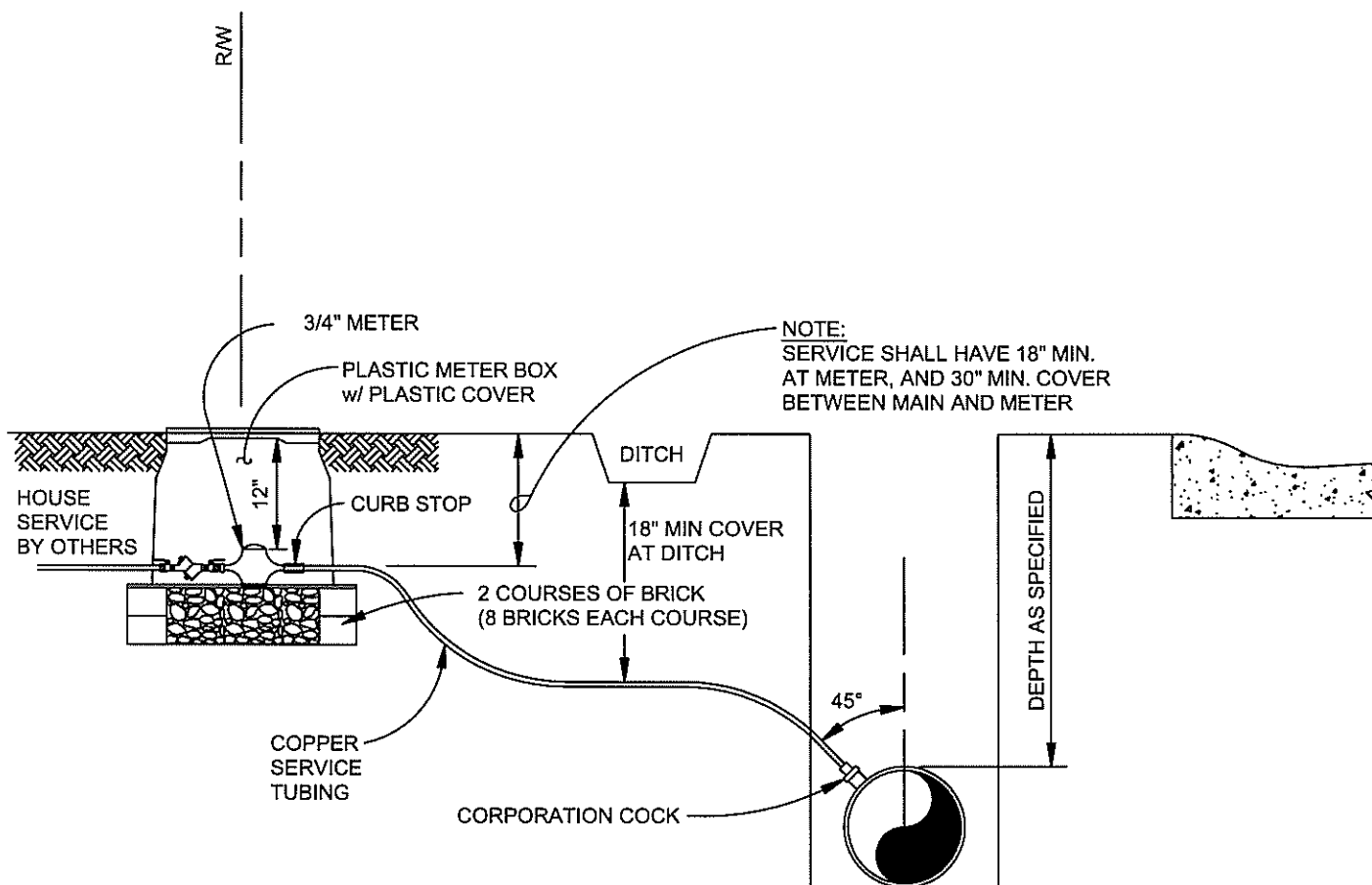
NOTES:

1. IN A TYPICAL RESIDENTIAL SUBDIVISION, THE METER WILL BE A 3/4" METER WITH THE BACKFLOW PREVENTER BUILT INTO THE METER. SERVICE LINES TO THE METER WILL BE 1" IN DIAMETER FROM THE MAIN TO THE CURB STOP.
2. 3/4" METERS REQUIRE 1" DIAMETER COPPER FROM WATER MAIN TO THE WYE AND 3/4" DIAMETER COPPER FROM THE WYE TO THE METER.
3. 1" METERS REQUIRE 2" DIAMETER COPPER FROM WATER MAIN TO THE WYE AND 1" DIAMETER COPPER FROM THE WYE TO THE METER.



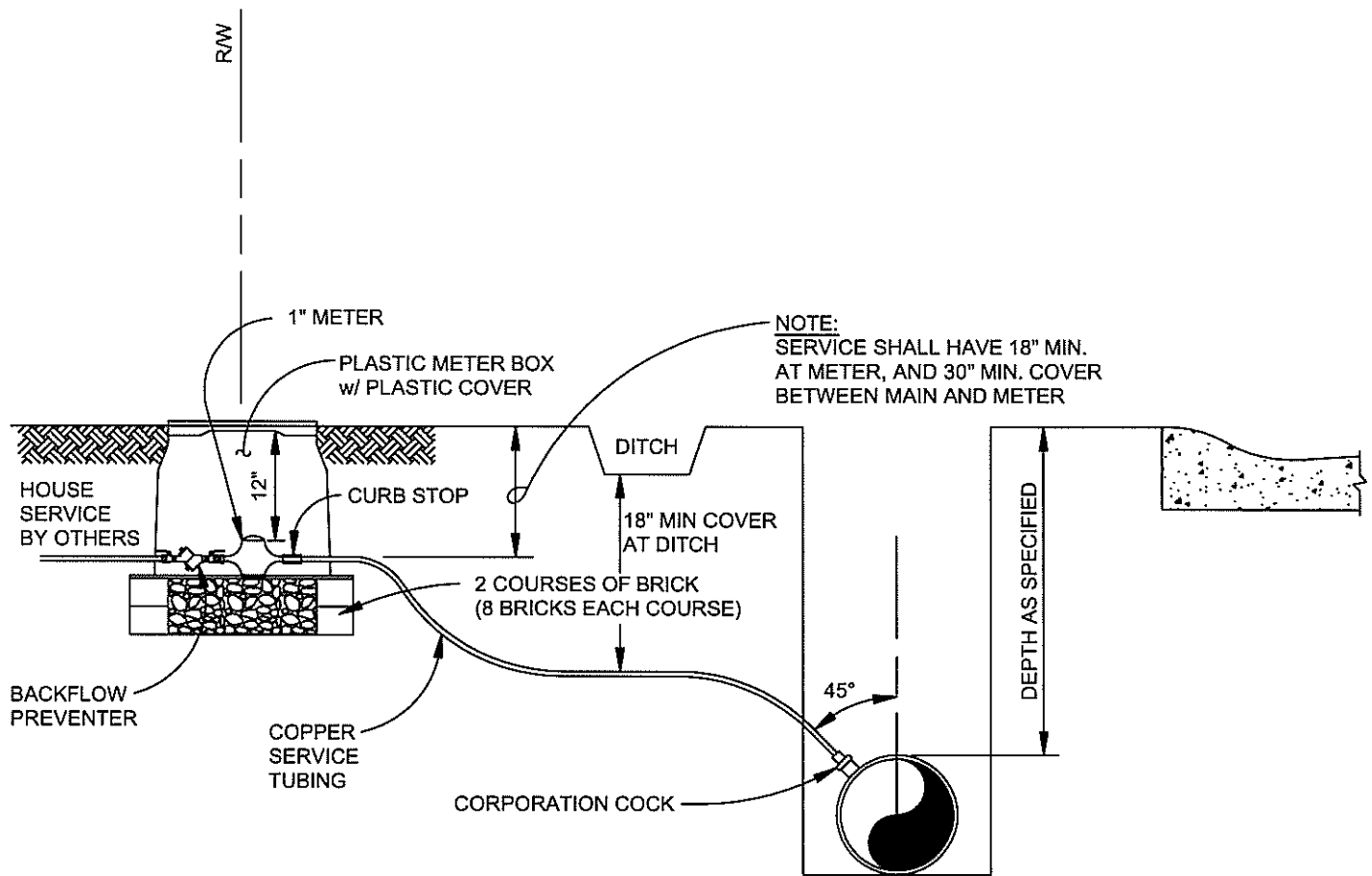
NOTE:

NO POWER TRANSFORMER OR POWER POLE SHALL BE LOCATED ON THE SAME LOT CORNER AS A WATER SERVICE.

**NOTES:**

1. SERVICE LINE SHALL BE 3/4" FROM MAIN TO METER.
2. USE ALL FLARE JOINTS
3. INSTALLATION SHALL ALLOW ADEQUATE ROOM TO REMOVE AND/OR REPAIR METER.
4. 3/4" METERS SHALL HAVE A BACKFLOW PREVENTER BUILT INTO THE METER.
5. METER BOX SHALL BE APPROXIMATELY 18" X 24".
6. THIS DETAIL AUTHORIZED FOR USE FOR INSTALLATION OF 3/4" IRRIGATION METERS.

3/4" METER INSTALLATION

**NOTES:**

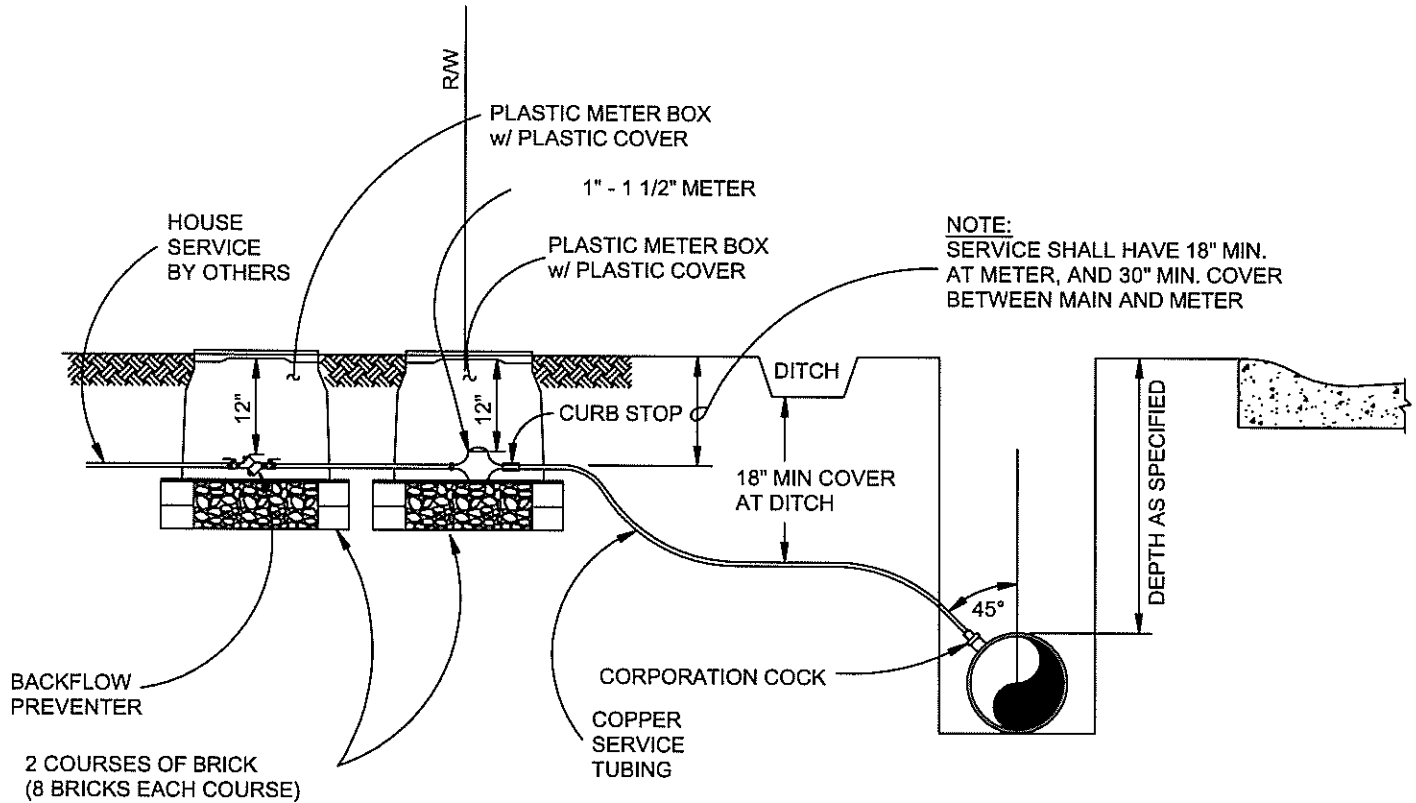
1. SERVICE LINE SHALL BE 1" FROM MAIN TO METER.
2. USE ALL FLARE JOINTS.
3. INSTALLATION SHALL ALLOW ADEQUATE ROOM TO REMOVE AND/OR REPAIR METER.
4. BACKFLOW PREVENTER SHALL BE INCLUDED IN METER BOX WITH METER.
5. METER BOX SHALL BE APPROXIMATELY 18" X 24".
6. THIS DETAIL AUTHORIZED FOR USE FOR INSTALLATION OF 1" RESIDENTIAL IRRIGATION METERS.
7. FOR A 1 1/2" RESIDENTIAL METER, USE THE 1"-1 1/2" COMMERCIAL METER INSTALLATION DETAIL (401-05.2).

1" RESIDENTIAL METER INSTALLATION

1" RESIDENTIAL METER INSTALLATION

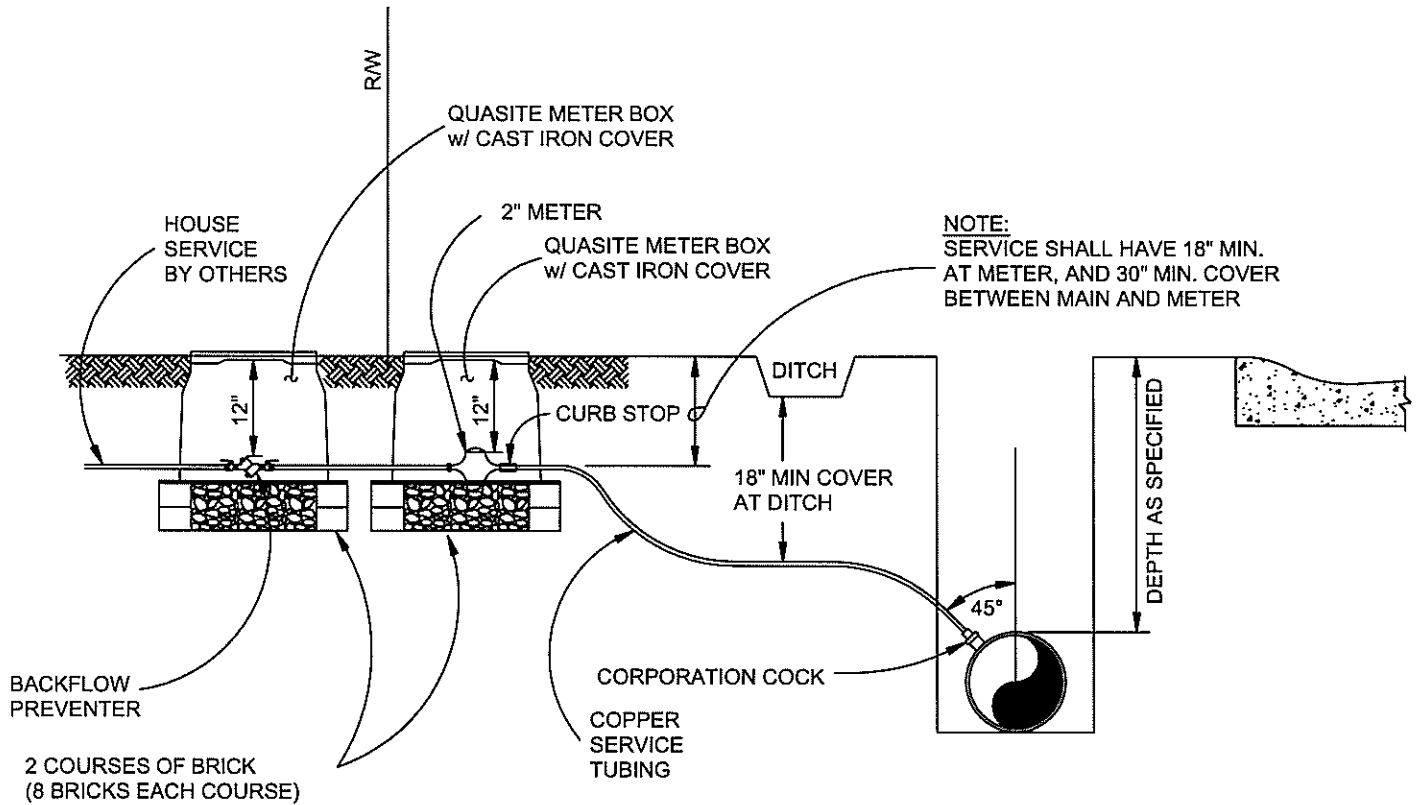
Standard No.

401-05.1

**NOTES:**

1. SERVICE LINE SHALL BE SAME SIZE AS METER FROM THE MAIN.
2. USE ALL FLARE JOINTS.
3. INSTALLATION SHALL ALLOW ADEQUATE ROOM TO REMOVE AND/OR REPAIR METER.
4. FOR 1" AND LARGER COMMERCIAL METERS, THE BACKFLOW PREVENTER SHALL BE SEPARATE FROM THE METER.
5. THE BACKFLOW PREVENTER SHALL BE INSTALLED IN A SEPARATE BOX.
6. BOTH METER BOXES SHALL BE APPROXIMATELY 24" X 36".
7. THIS DETAIL AUTHORIZED FOR USE FOR INSTALLATION OF 1" - 1 1/2" COMMERCIAL METERS.
8. USE THIS DETAIL FOR 1 1/2" RESIDENTIAL METERS.

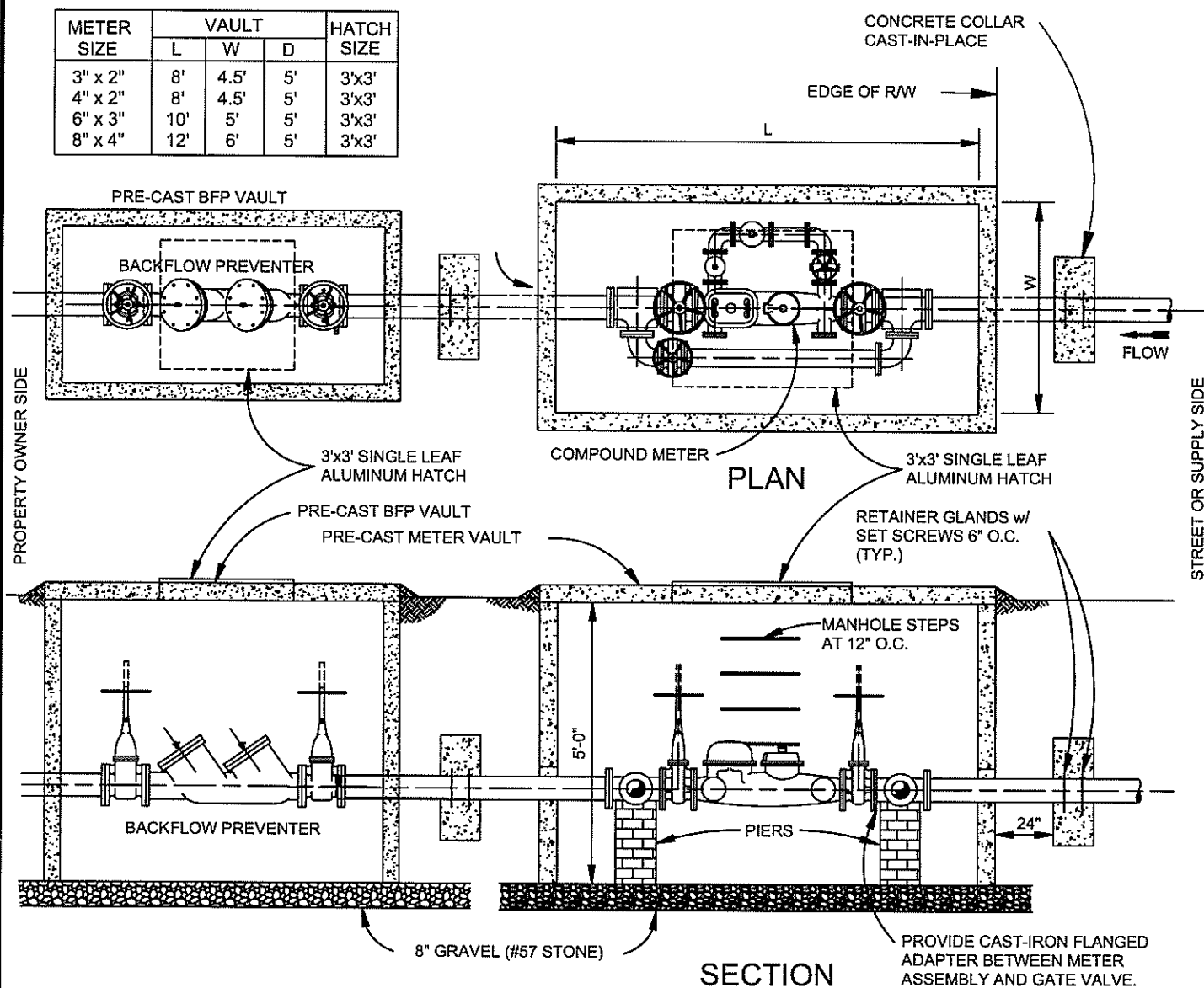
1" - 1 1/2" COMMERCIAL METER INSTALLATION



NOTES:

1. SERVICE LINE SHALL BE 2" DIAMETER FROM THE MAIN TO THE METER.
2. USE FLARE OR COMPRESSION JOINTS WITH RETAINER RING.
3. INSTALLATION SHALL ALLOW ADEQUATE ROOM TO REMOVE AND/OR REPAIR METER.
4. THE BACKFLOW PREVENTER SHALL BE SEPARATE FROM THE METER.
5. THE BACKFLOW PREVENTER SHALL BE INSTALLED IN A SEPARATE BOX.
6. BOTH METER BOXES SHALL BE APPROXIMATELY 24" X 36".
7. THIS DETAIL AUTHORIZED FOR USE FOR INSTALLATION OF 2" COMMERCIAL IRRIGATION METERS.

2" COMMERCIAL METER INSTALLATION

**NOTES:**

1. BOXES EXCEEDING 5' IN DEPTH MUST BE APPROVED BY MARIETTA WATER.
2. METER TO BE LOCATED OUTSIDE OF R/W. A PERMANENT EASEMENT SHALL BE OBTAINED TO PREVENT FENCES OR OTHER OBSTRUCTIONS FROM BEING ERRECTED AROUND THE METER BOX.
3. COVER OPENING & STEPS TO BE PLACED NEAREST THE METER REGISTER.
4. BYPASS REQUIRED (WITH VALVES), TO BE INSTALLED INSIDE THE VAULT.
5. THE METER MUST BE INSTALLED WITH AT LEAST 8 PIPE DIAMETERS OF STRAIGHT PIPE SAME SIZE AS METER ON THE INLET SIDE TO PERMIT ON-SITE MAINTENANCE AND CALIBRATION. A STRAINER MAY BE PROVIDED IN LIEU OF THE STRAIGHT PIPE IN ACCORDANCE WITH THE METER MANUFACTURER'S RECOMMENDATIONS. AN INLET AND OUTLET GATE VALVE WITH BYPASS LINE ARE REQUIRED (SEE ILLUSTRATION).
6. THESE BOXES ARE NOT TO BE INSTALLED IN TRAFFIC AREAS WITHOUT PRIOR PERMISSION FROM MARIETTA WATER.
7. BACK FLOW PREVENTION REQUIRED ON PROPERTY OWNER'S SIDE OF METER AS SHOWN. LOCATION SHALL BE APPROVED BY MARIETTA WATER. ALL BACKFLOW PREVENTERS SHALL BE INSTALLED IN VAULTS. VAULTS FOR 3" AND 4" BACKFLOW PREVENTERS SHALL BE 4' WIDE AND 5' LONG. VAULTS FOR 6" AND 8" BACKFLOW PREVENTERS SHALL BE 4' WIDE AND 7' LONG. VAULTS SHALL BE 5' DEEP.
8. ALL VALVES AND FITTINGS INSIDE THE VAULT SHALL BE FLANGED.
9. ALL FITTINGS OUTSIDE THE VAULT SHALL BE MECHANICAL JOINT WITH RETAINER GLANDS.
10. ALL METERS SHALL COME EQUIPPED WITH A TOUCHREAD OR TOUCHLESS SENSOR COMPATIBLE WITH MARIETTA WATER'S METER READING EQUIPMENT.
11. THIS DETAIL AUTHORIZED FOR USE FOR INSTALLATION OF 3" AND LARGER IRRIGATION METERS.



COMPOUND METERS AND VAULT

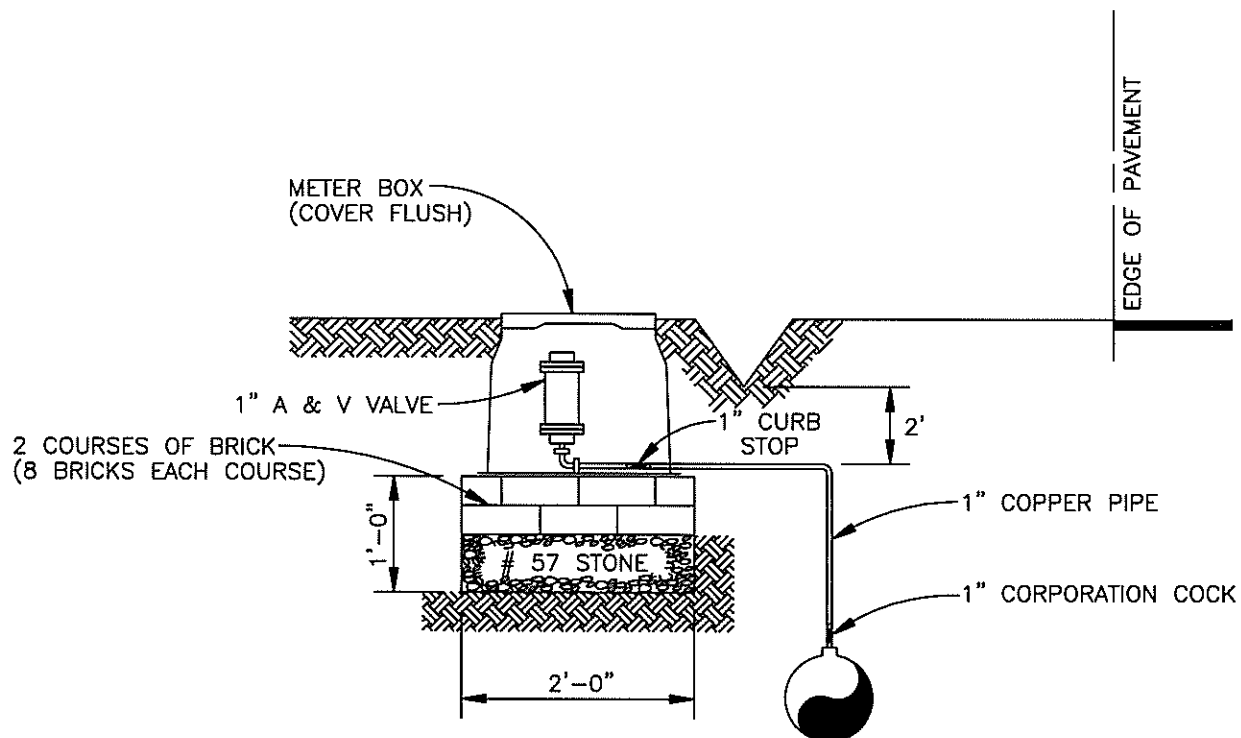
Standard No.

401-06



1. BOXES EXCEEDING 5' IN DEPTH MUST BE APPROVED BY MARIETTA WATER.
2. METER VAULT TO BE LOCATED OUTSIDE OF R/W. A PERMANENT EASEMENT SHALL BE OBTAINED TO PREVENT FENCES OR OTHER OBSTRUCTION FROM BEING ERRECTED AROUND THE METER BOX.
3. COVER OPENING & STEPS TO BE PLACED NEAREST THE METER REGISTER.
4. THESE BOXES ARE NOT TO BE INSTALLED IN TRAFFIC AREAS WITHOUT PRIOR PERMISSION FROM MARIETTA WATER.
5. ALL VALVES AND FITTINGS INSIDE THE VAULT SHALL BE FLANGED.
6. REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA) REQUIRED WHEN THE DANGER FROM BACKFLOW PRESENTS A HEALTH HAZARD. ALL RPDA'S SHALL BE INSTALLED IN VAULTS SET ABOVE THE GROUND WITH DRAINS.
7. ALL METERS SHALL COME EQUIPPED WITH A TOUCHREAD OR TOUCHLESS SENSOR COMPATIBLE WITH MARIETTA WATER'S METER READING EQUIPMENT.

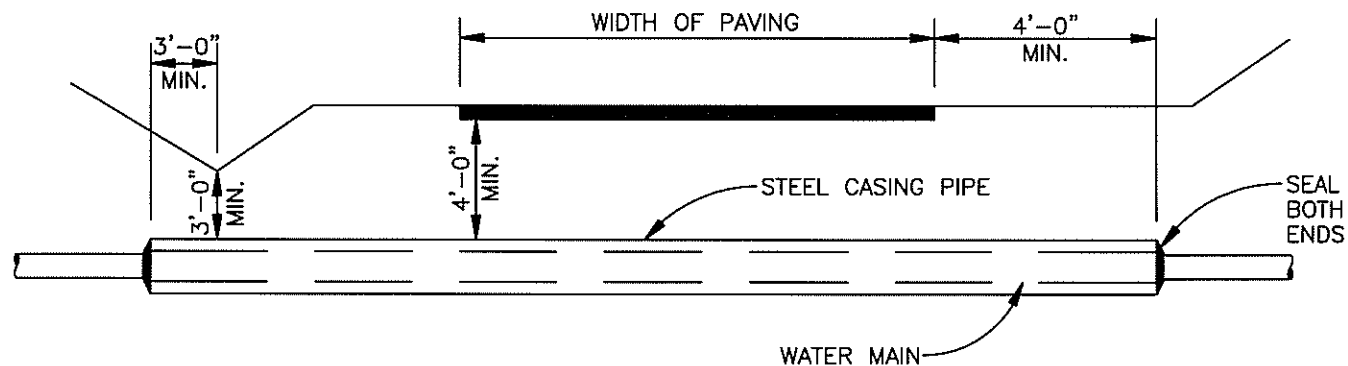
FIRE LINE SIZE	VAULT		HATCH SIZE
	L	W	
2"	3'	2'	N/A
3"	8.5'	4'	3'x3'
4"	8.5'	4'	3'x3'
6"	8.5'	4'	3'x3'
8"	8.5'	4'	3'x3'



NOTES:

1. VALVE MARKER REQUIRED.
2. A & V VALVE AND COPPER SHALL BE SIZED IN ACCORDANCE WITH VALVE MANUFACTURER'S RECOMMENDATIONS.

TYPICAL WATER AIR & VACUUM RELEASE VALVE ASSEMBLY



NOTES:

1. CASING PIPE SHALL EXTEND A MINIMUM OF 3' BEYOND TOE OF FILL SLOPES OR DITCH LINES AND 4' BEYOND EDGE OF PAVT. AND BACK OF CURB.
2. CASING SPACERS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

TYPICAL ROAD CROSSING

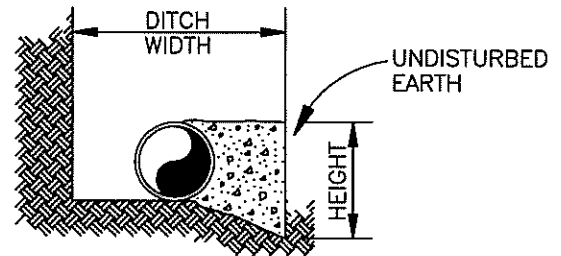
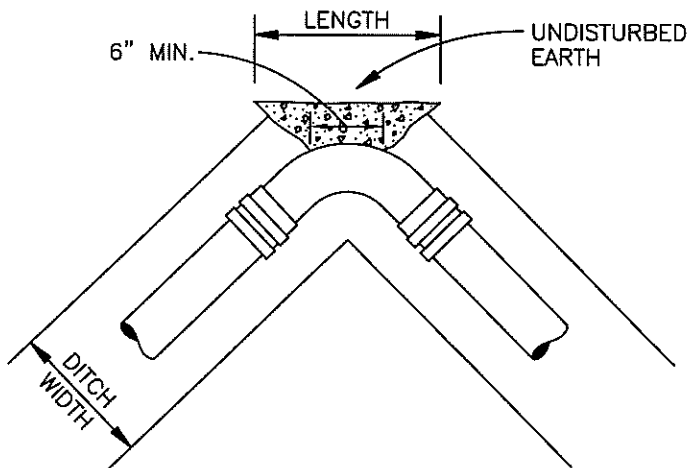


TABLE FOR CONCRETE BLOCKING
(12" PIPE, 200 PSI TEST PRESSURE)

<u>FITTING</u>	<u>MINIMUM BEARING AREA</u> <u>LENGTH x HEIGHT</u>
11 1/4° BEND	2' x 1.5'
22 1/2° BEND	3' x 2'
45° BEND	4' x 3'
90° BEND	5.5' x 4'
TEE	4' x 4'
DEAD END	4' x 4'

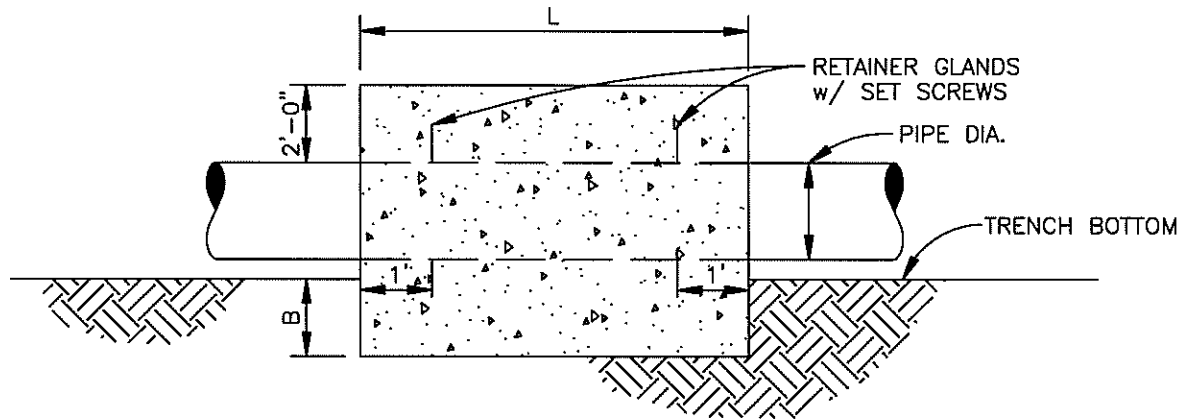
FOR SMALLER PIPE, THE ABOVE BLOCKING BEARING AREA CAN BE MULTIPLIED BY REDUCTION FACTORS SHOWN BELOW; HOWEVER, THE LEAST DIMENSION IS TO BE NOT LESS THAN 1 FOOT.

<u>PIPE SIZE</u>	<u>REDUCTION FACTOR</u>
10"	0.70
8"	0.45
6"	0.25

NOTE:

1. SOIL BEARING STRENGTH OF 1500 PSF IS ASSUMED IN THE CALCULATIONS ABOVE.
2. REDUCTION FACTOR IS TO BE MULTIPLIED BY BEARING AREA, NOT BY LENGTH AND HEIGHT DIMENSIONS.

CONCRETE BLOCKING DETAIL



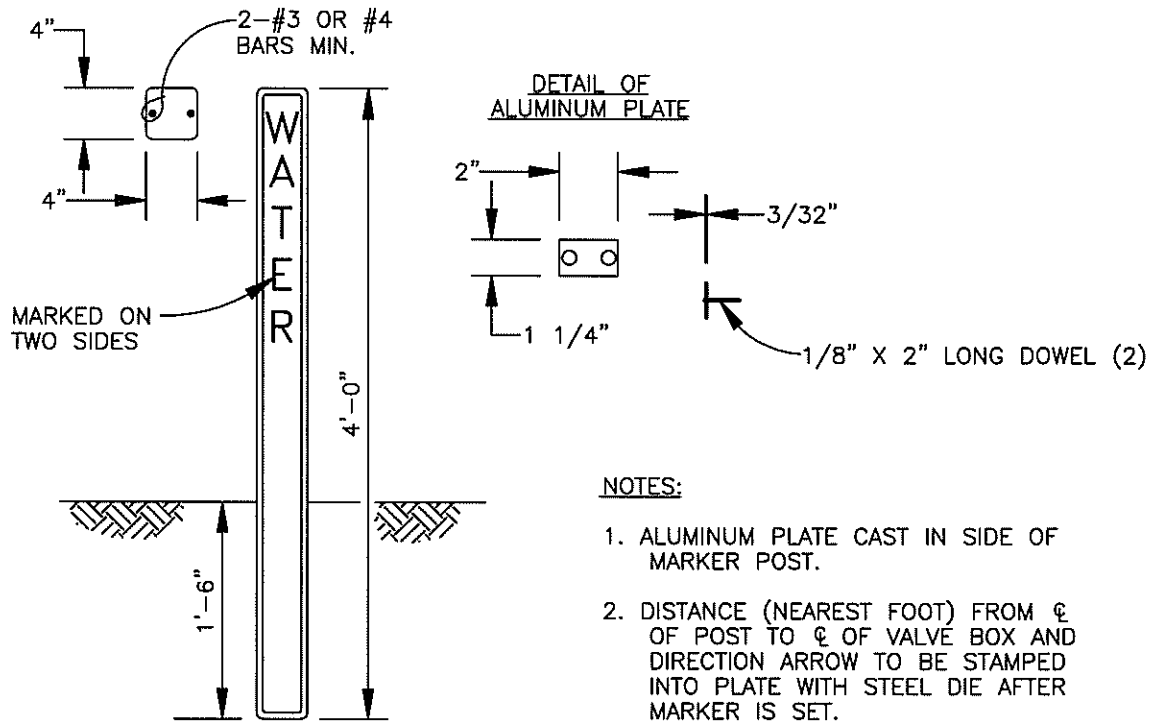
PROFILE VIEW

PIPE DIA.	L	B
8"	3'	1'
10"	3'	1'
12"	3'	1'
16"	3'	2'

NOTES:

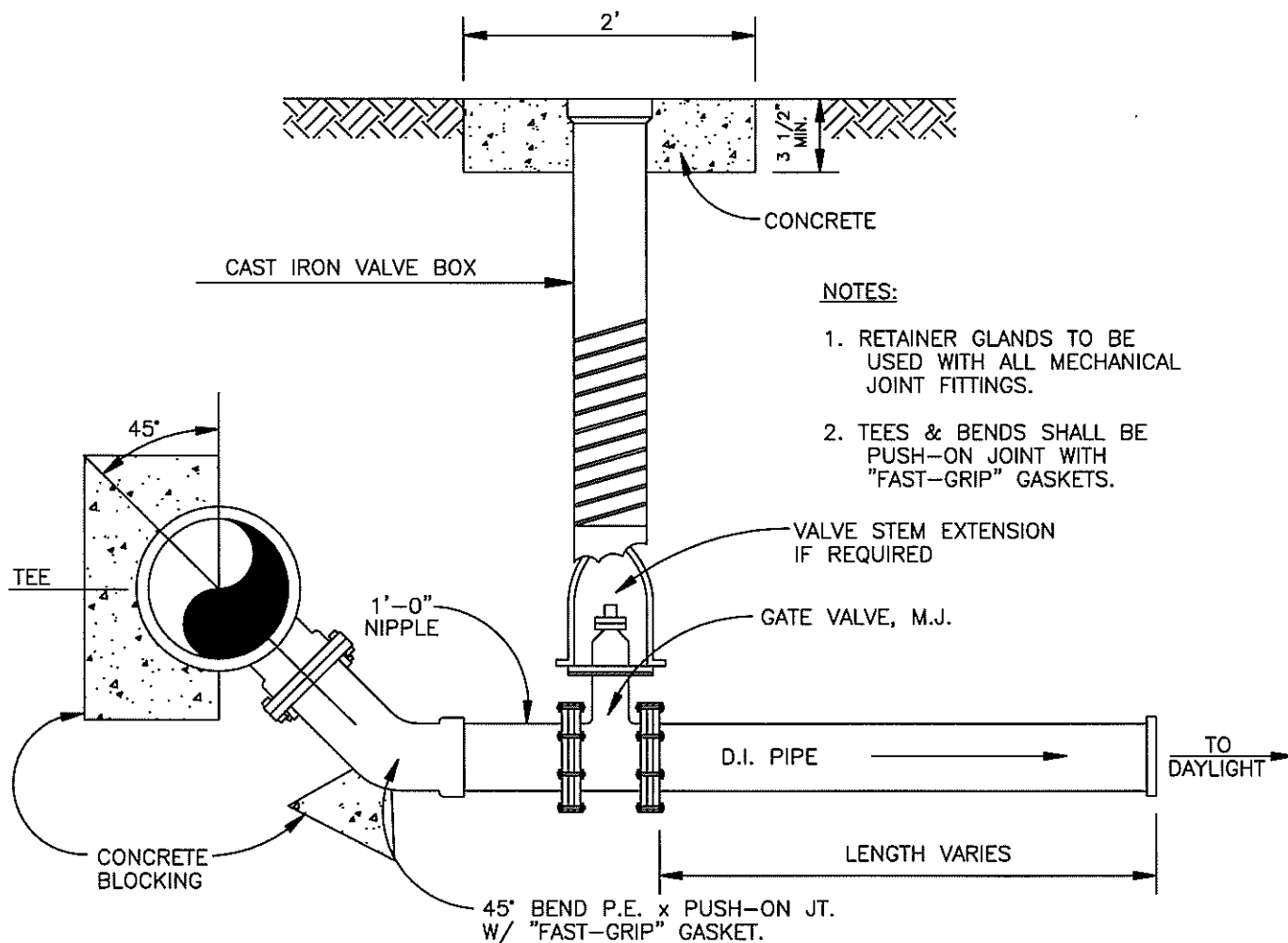
1. CONCRETE COLLAR WIDTH EQUALS THE WIDTH OF THE TRENCH PLUS FOUR FEET (TWO FEET ON EACH SIDE OF THE TRENCH).
2. EFFECTIVE DESIGN FOR SYSTEMS WITH TOTAL SYSTEM PRESSURE (WORKING AND SURGE) UP TO 250 PSI, BASED UPON SOIL BEARING STRENGTH OF 1500 PSF.

CONCRETE THRUST COLLAR

**NOTES:**

1. ALUMINUM PLATE CAST IN SIDE OF MARKER POST.
2. DISTANCE (NEAREST FOOT) FROM ϕ OF POST TO ϕ OF VALVE BOX AND DIRECTION ARROW TO BE STAMPED INTO PLATE WITH STEEL DIE AFTER MARKER IS SET.
3. INSTALL VALVE MARKERS AS REQUIRED BY MARIETTA WATER.

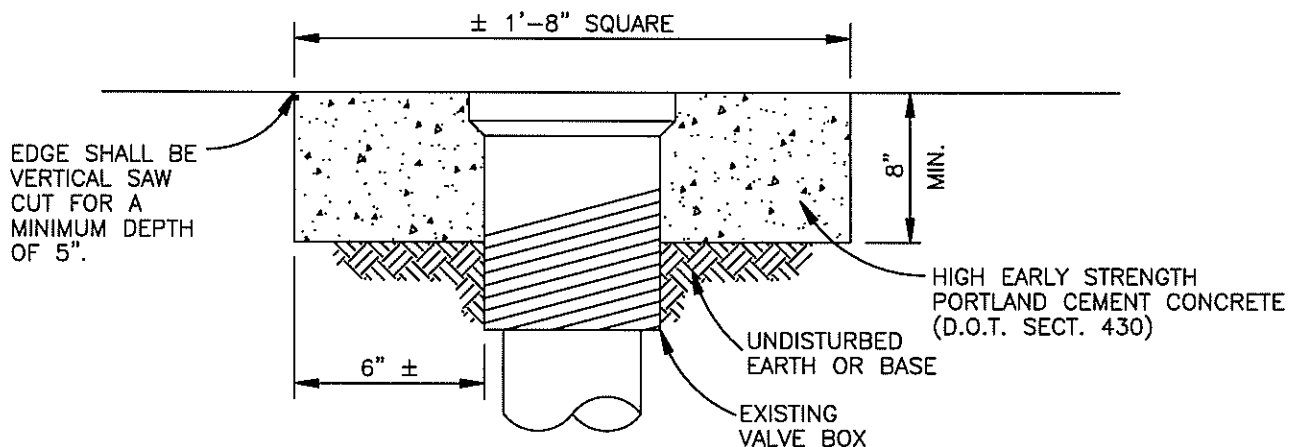
DETAIL OF CONCRETE VALVE MARKER



BLOW-OFF ASSEMBLY

NOTE:
DO NOT USE IN AREA
WHERE FLOODING WILL OCCUR

IF REPLACEMENT IS NECESSARY, THE VALVE BOX SHALL BE AN APPROVED STANDARD CAST IRON ADJUSTABLE WITH A MINIMUM DIAMETER OF 5-1/4". THE LID SHALL BEAR THE WORD "WATER" OR THE LETTER "W". BOXES SHALL BE EQUAL TO EAST JORDAN IRON WORKS 8550 SERIES 562-S.

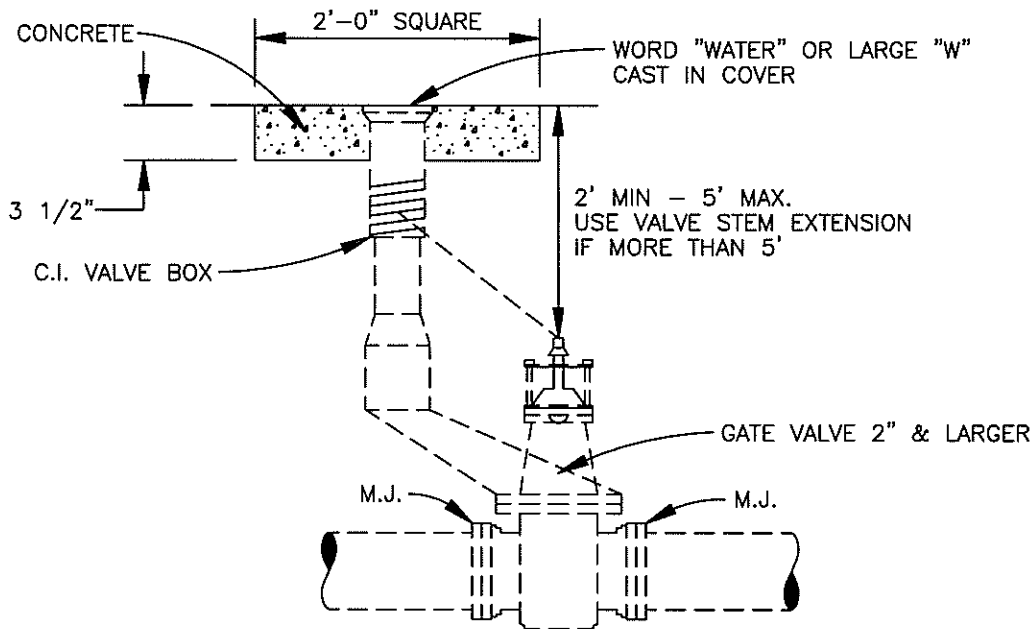


WATER VALVE BOX GRADE ADJUSTMENT

NOT TO SCALE

NOTES:

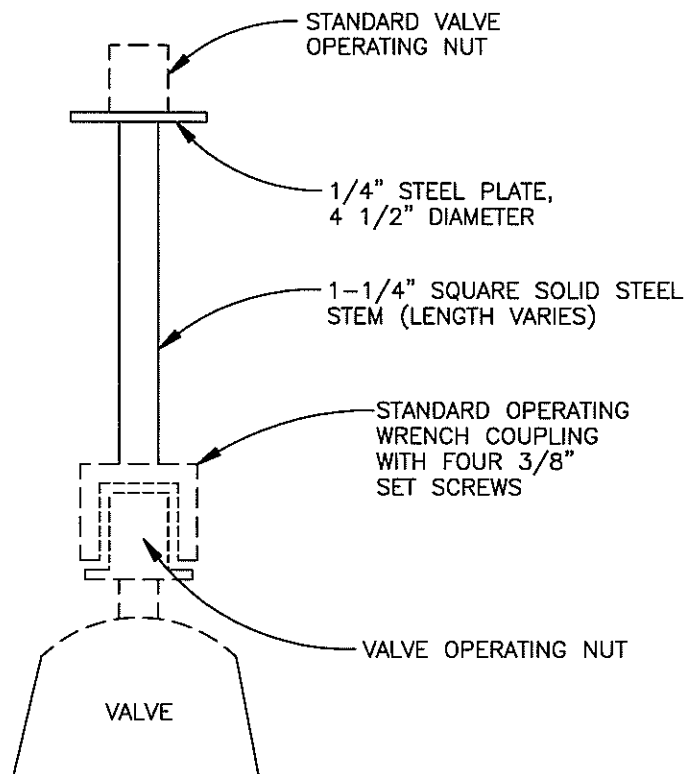
1. PORTLAND CONCRETE FOR COLLAR SHALL BE MIN. OF 8" THICK BELOW THE EXIST. PAVEMENT TO UNDISTURBED EARTH.
2. BEFORE WORKING IN AN AREA, THE CONTRACTOR SHALL NOTIFY MARIETTA WATER.
3. THIS ADJUSTMENT METHOD REQUIRES THE USE OF STEEL PLATES TO PROTECT THE FRESH CONCRETE FOR A MINIMUM OF 24 HOURS. BARRICADES AND CONES ARE NOT ALLOWED. THIS METHOD OF ADJUSTMENT SHALL BE USED IN ALL HIGH TRAFFIC AREAS.



TYPICAL VALVE INSTALLATION

NOTES:

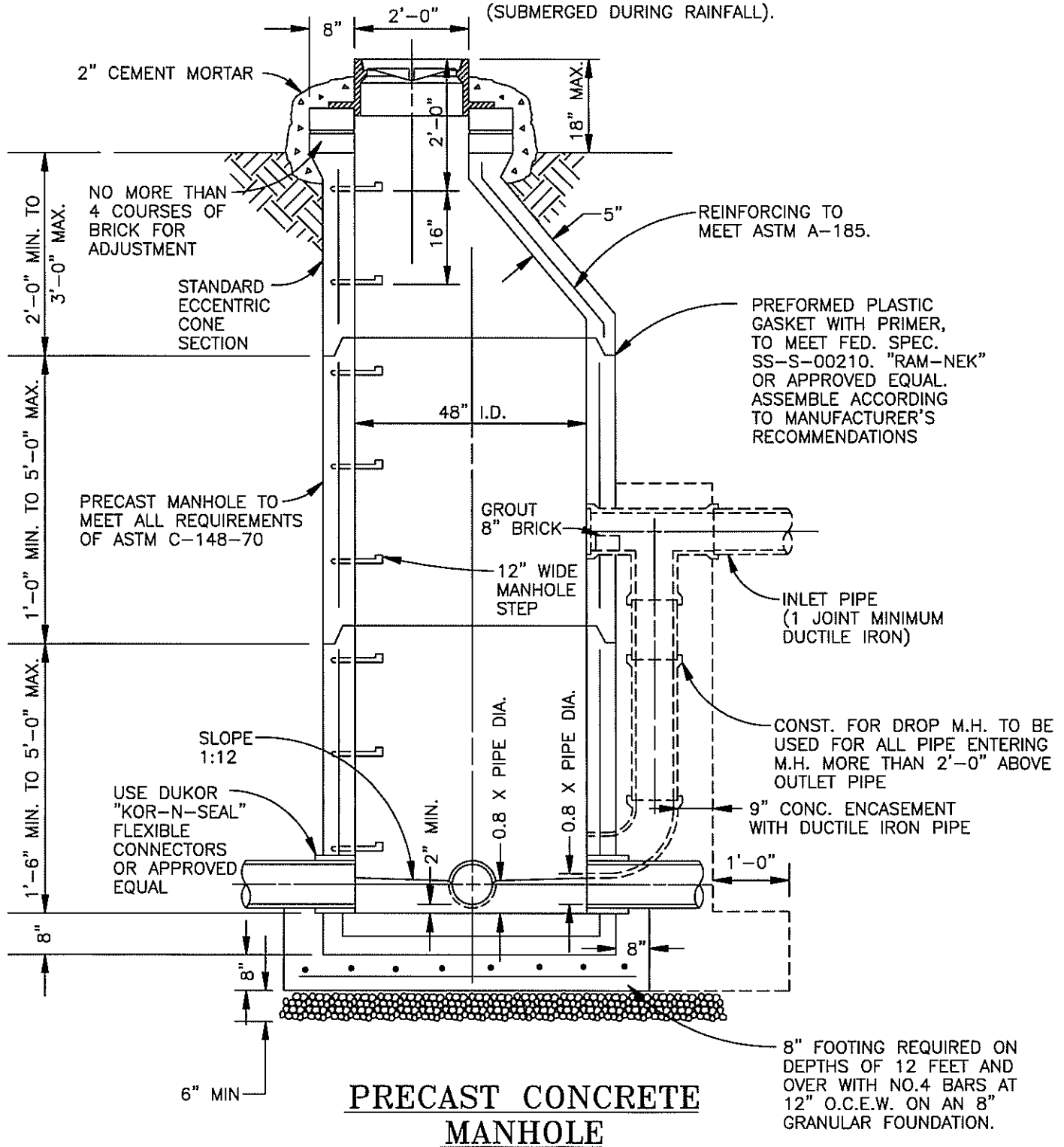
1. TOP OF EXTENSION SHALL BE NO MORE THAN FIVE FEET BELOW FINAL GRADE.
2. EXTENSION REQUIRED IF DEPTH IS GREATER THAN FIVE FEET.
3. EXTENSION MUST BE ONE SOLID PIECE FROM NUT TO COUPLING.



VALVE STEM EXTENSION DETAIL

NOTES:

1. MANHOLES TO BE FLUSH WITH PAVEMENT IN PAVED AREAS.
2. MANHOLES ON OUTFALL LINES ARE TO BE 18" ABOVE GROUND.
3. WATER-TIGHT MANHOLE FRAME AND COVERS SHALL BE DESIGNATED ON PLAN AND PROFILE, AND SHALL BE REQUIRED IN FLOOD PLAINS OR AREAS SUBJECT TO FLOODING (SUBMERGED DURING RAINFALL).



1. MANHOLES TO BE FLUSH WITH PAVEMENT IN PAVED AREAS.
2. MANHOLES ON OUTFALL LINES ARE TO BE 18" ABOVE GROUND.
3. WATER-TIGHT MANHOLE FRAME AND COVERS SHALL BE DESIGNATED ON PLAN AND PROFILE, AND SHALL BE REQUIRED IN FLOOD PLAINS OR AREAS SUBJECT TO FLOODING (SUBMERGED DURING RAINFALL).





1. MANHOLES TO BE FLUSH WITH PAVEMENT IN PAVED AREAS.
2. MANHOLES ON OUTFALL LINES ARE TO BE 18" ABOVE GROUND.
3. WATER-TIGHT MANHOLE FRAME SHALL BE DESIGNATED ON PLAN AND PROFILE, AND SHALL BE REQUIRED IN FLOOD PLAINS OR AREAS SUBJECT TO FLOODING (SUBMERGED DURING RAINFALL).

8" FOOTING REQUIRED ON DEPTHS OF 12 FEET -
AND OVER WITH NO.4 BARS AT 12" O.C.E.W. ON
AN 8" GRANULAR FOUNDATION.

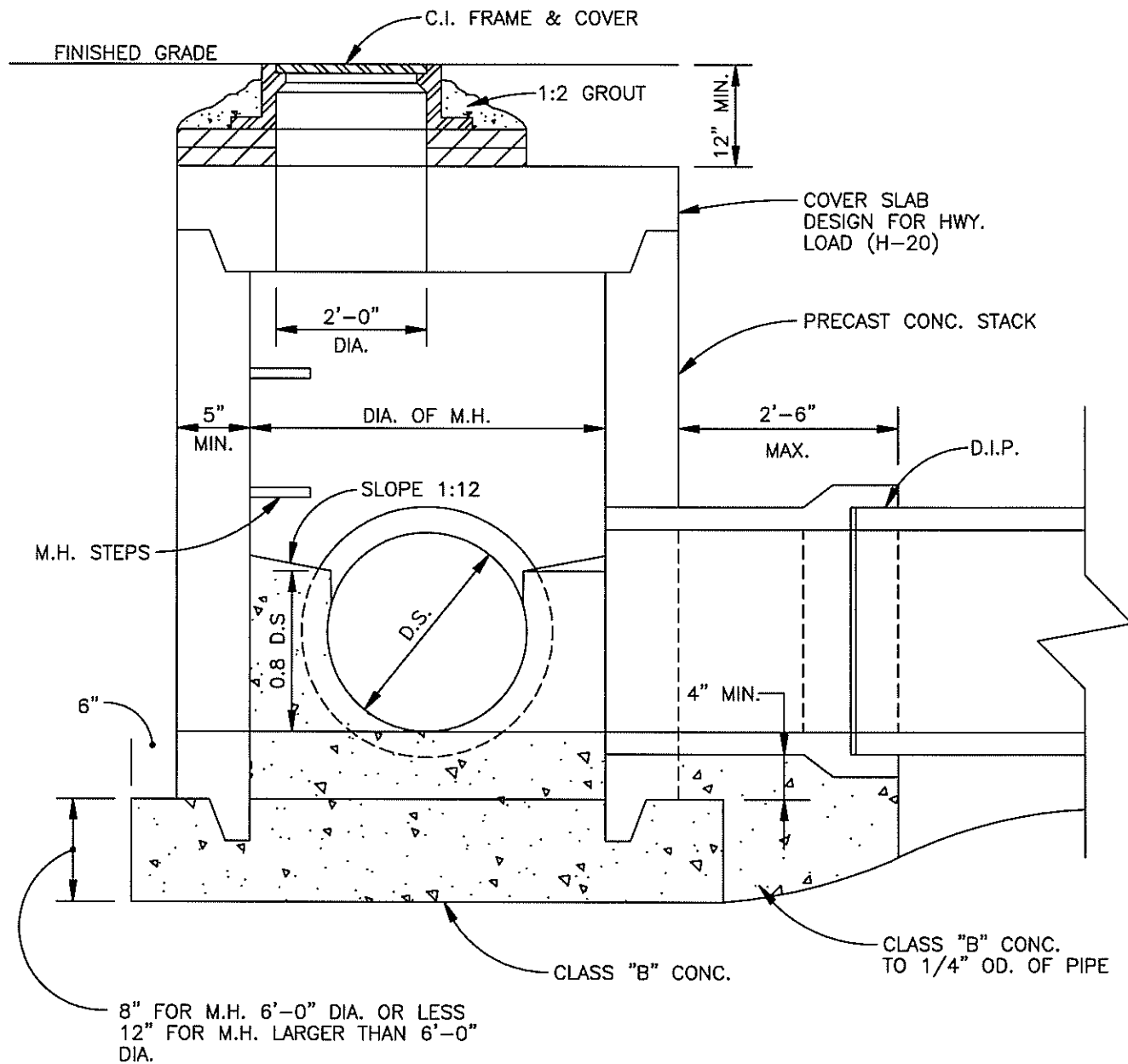
STANDARD VENTED MANHOLE (FOR PIPE LARGER THAN 18")



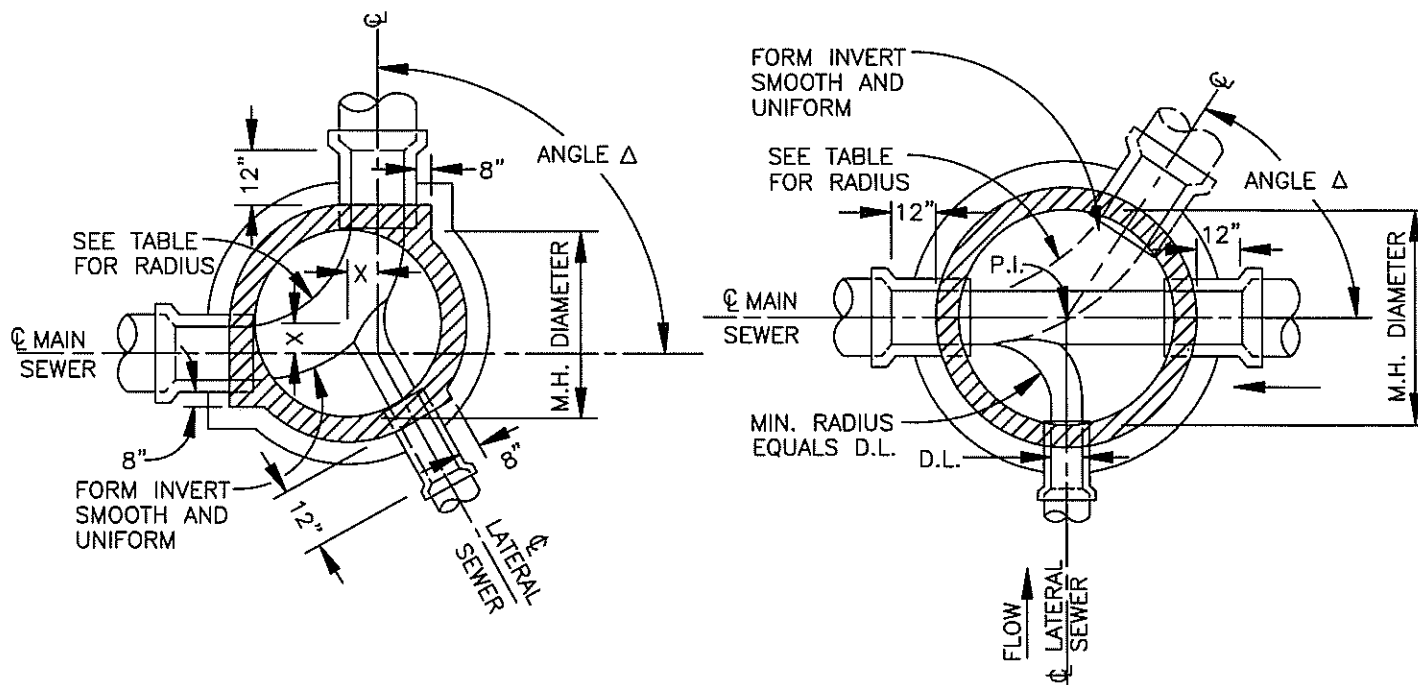
STANDARD VENTED MANHOLE

Standard No.

402-02

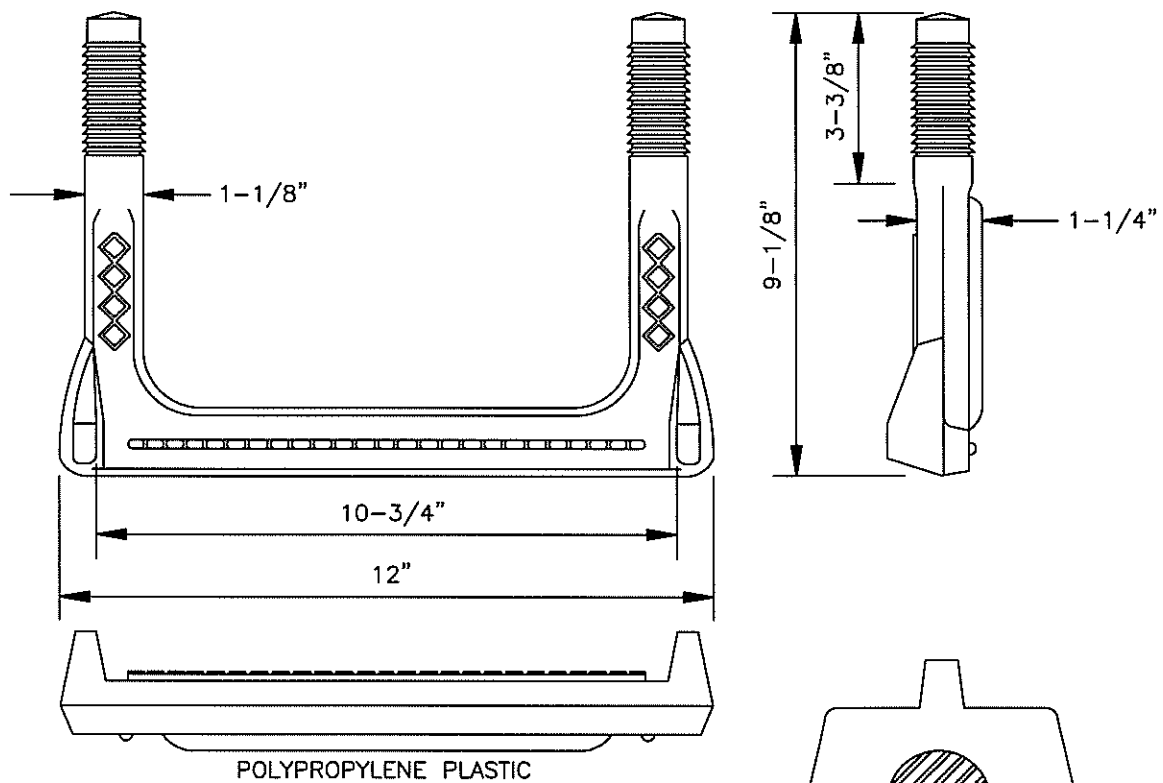


SHALLOW MANHOLE DETAIL

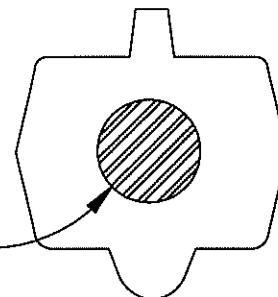


TYPICAL PLANS STANDARD MANHOLE

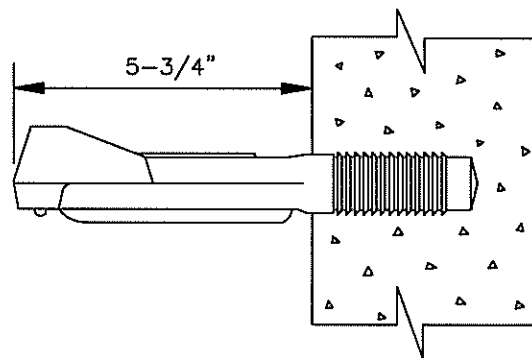
STANDARD MANHOLE SCHEDULE OF GOVERNING DIMENSIONS				
PIPE SIZE	ANGLE Δ	MANHOLE DIAMETER	"R"	"X"
8" TO 18"	0° TO 90°	4'-0"	2'-0"	0"
21" & 24"	0° TO 60°	4'-0"	2'-0"	6"
21" & 24"	60° TO 70°	5'-0"	2'-0"	6"
21" & 24"	70° TO 80°	5'-0"	2'-0"	7- 1/2"
21" & 24"	80° TO 90°	5'-0"	2'-0"	10- 1/2"
30" & 36"	0° TO 60°	5'-0"	3'-0"	8"
30" & 36"	60° TO 70°	6'-0"	3'-0"	10"
30" & 36"	70° TO 80°	6'-0"	3'-0"	13"
30" & 36"	80° TO 90°	6'-0"	3'-0"	16"
42"	0° TO 35°	6'-0"	3'-0"	3"
42"	35° TO 50°	6'-0"	6'-0"	6"
42"	50° TO 90°	7'-0"	6'-0"	0"
48" & 54"	0° TO 35°	6'-0" & 7'-0"	6'-0"	0"
48" & 54"	35° TO 90°	8'-0"	6'-0"	0"



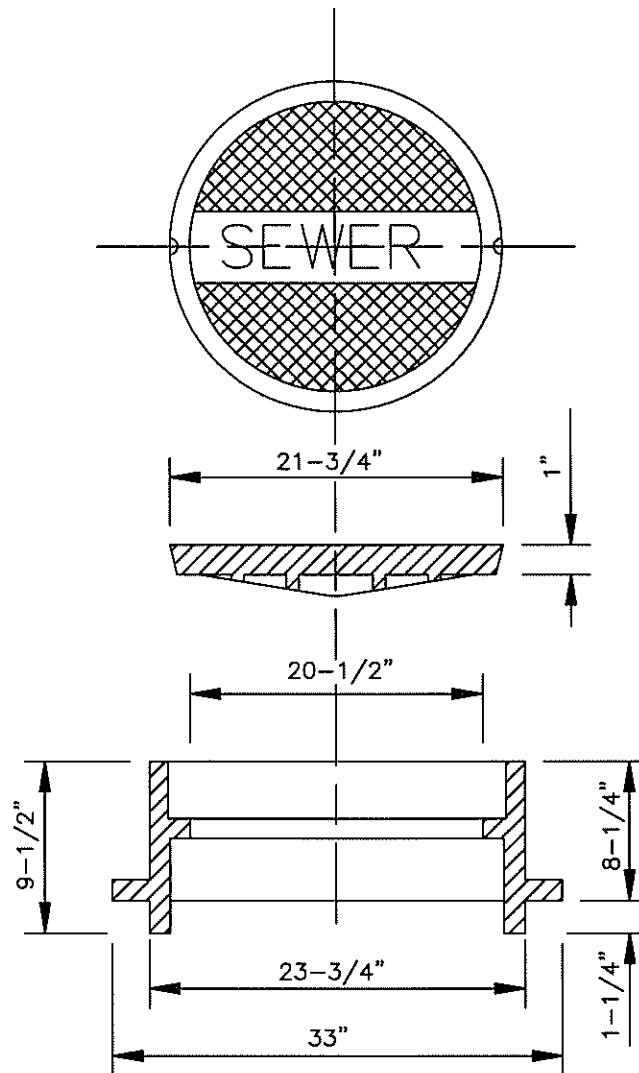
1/2" GRADE 60 STEEL REINFORCEMENT



SECTION



MANHOLE STEP DETAIL



MANHOLE FRAME AND COVER

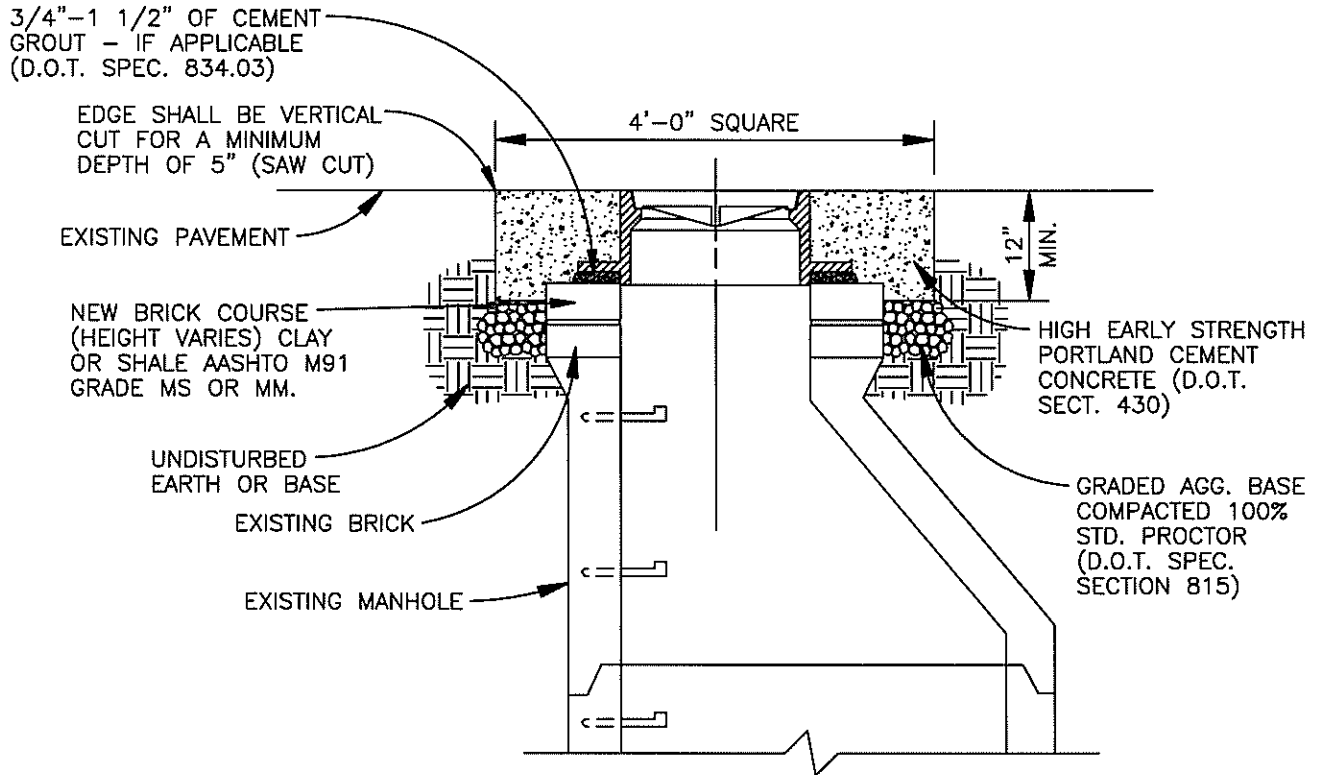
TOTAL WEIGHT:

300 LB. NON-TRAFFIC

365 LB. IN ROADWAY OR PARKING LOT

435 LB. WATER-TIGHT

IF REPLACEMENT IS NECESSARY, THE FRAME AND COVER SHALL BE CAST IRON. THE FRAME SHALL WEIGH APPROXIMATELY 230 POUNDS AND THE COVER SHALL WEIGH APPROXIMATELY 150 POUNDS. SEE BOARD OF LIGHTS AND WATER STANDARD MANHOLE FRAME AND COVER.



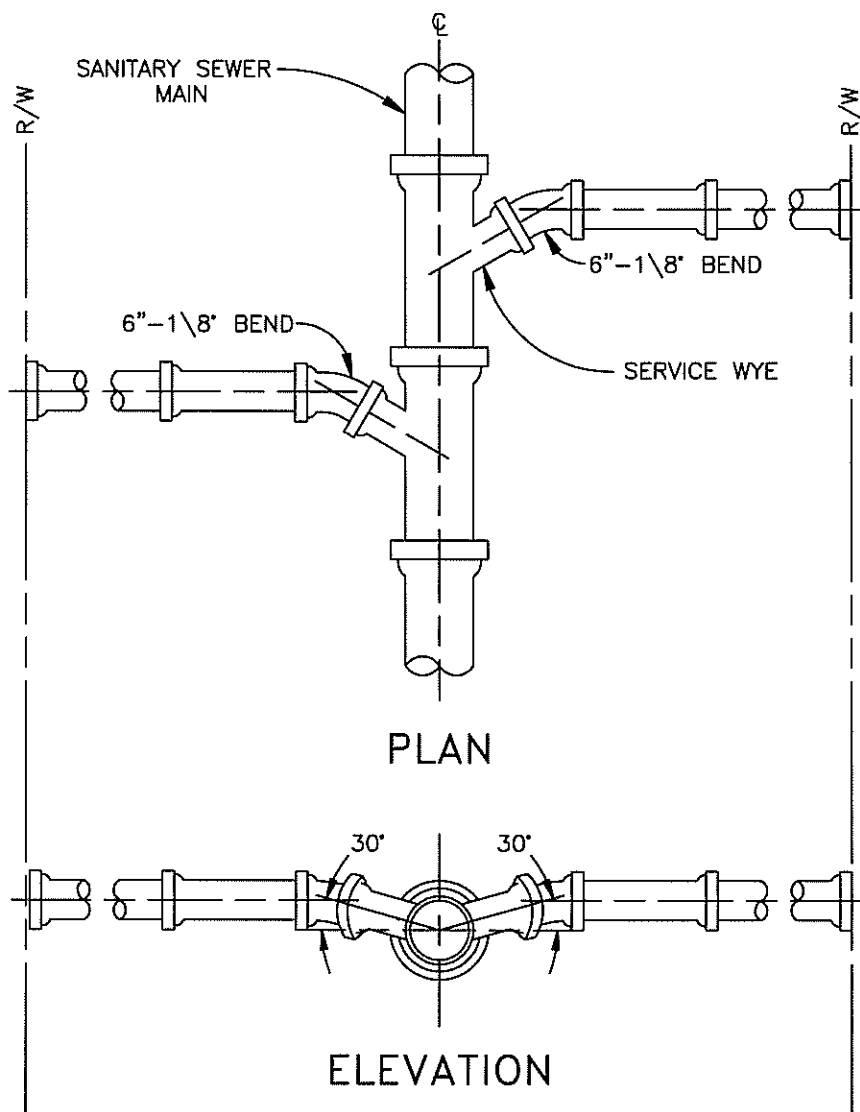
MANHOLE FRAME-GRADE ADJUSTMENT

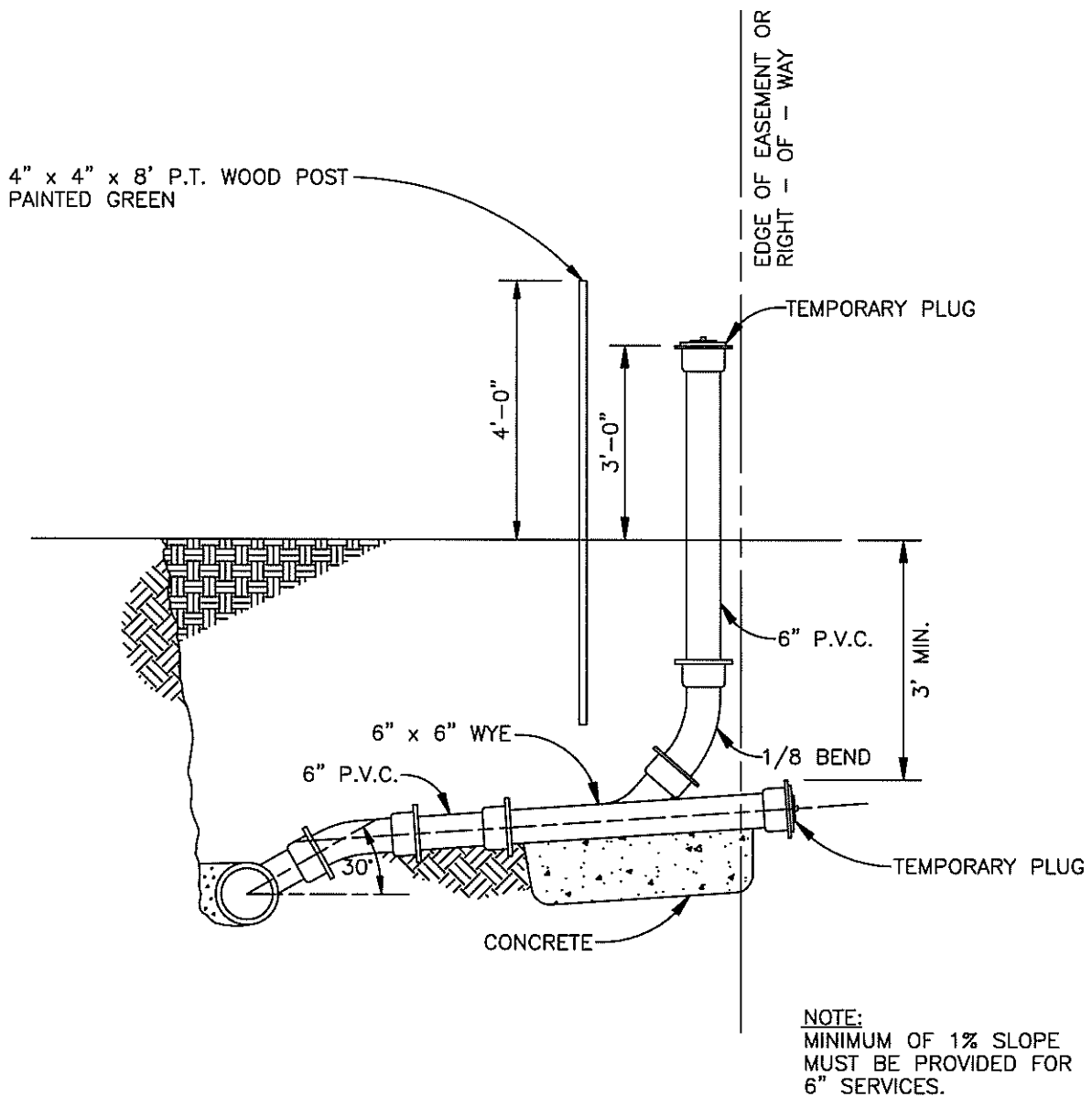
NOTES:

1. PORTLAND CONCRETE FOR COLLAR SHALL BE A MIN. OF 12" THICK AND SHALL EXTEND FROM THE LAST FULL COURSE OF BRICK TO FLUSH WITH THE EXISTING PAVEMENT.
2. THE CONCRETE SHALL BE LEFT WITH A SMOOTH FINISH FLUSH WITH THE ASPHALT SURFACE.
3. STEEL PLATES ARE REQUIRED BY MARIETTA WATER IN HIGH TRAFFIC AREAS TO PROTECT THE FRESH CONCRETE FOR A MINIMUM OF 40 HOURS. IN THESE HIGH TRAFFIC AREAS, BARRICADES, CONES, ETC. WILL NOT BE ALLOWED.
4. BEFORE WORKING IN AN AREA, THE CONTRACTOR SHALL NOTIFY MARIETTA WATER.

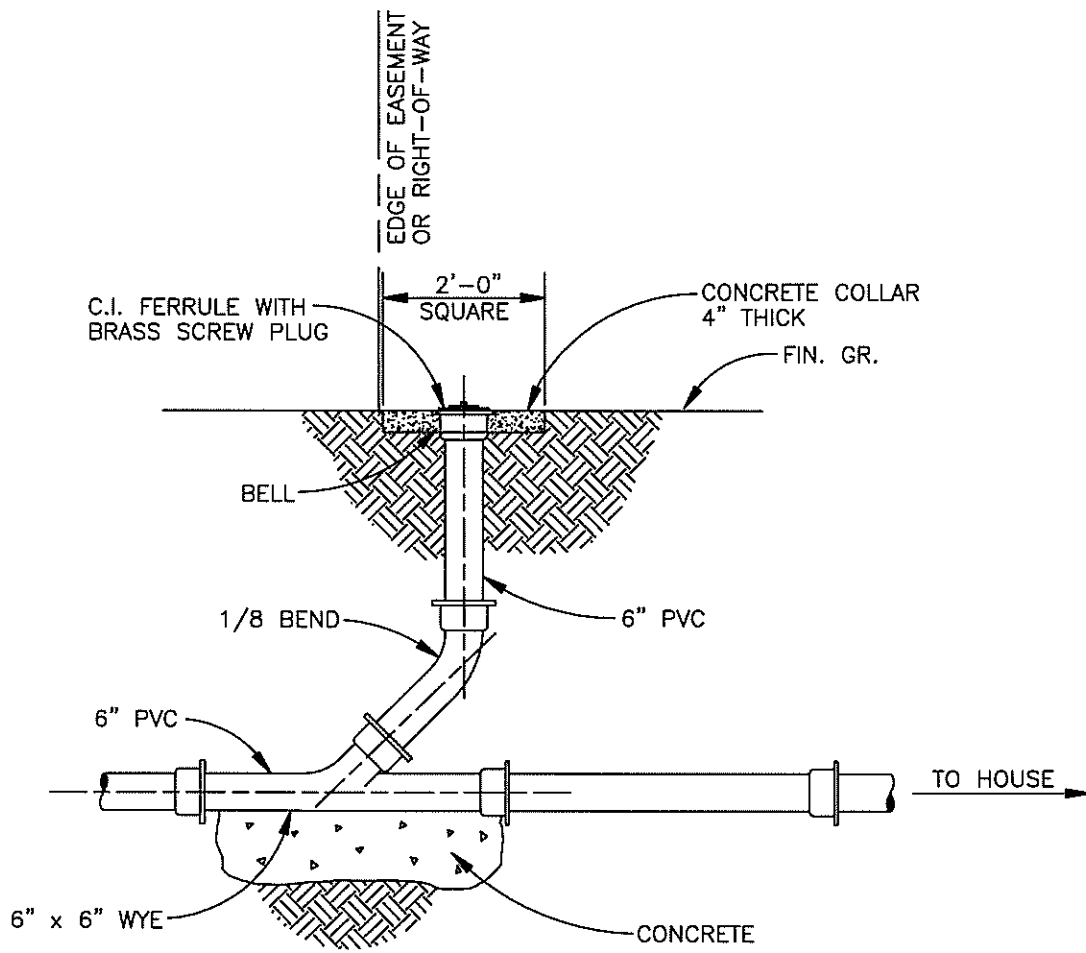
NOTES:

1. SEWER LATERAL TO BE LOCATED 5 FEET FROM THE SIDE LOT LINE ON THE DOWNSTREAM SIDE OF THE SANITARY SEWER.
2. MIN. SLOPE OF 1% REQ'D. FOR 6" SERVICE.
3. SEE DETAIL FOR CLEANOUTS.

SEWER SERVICE
LATERAL

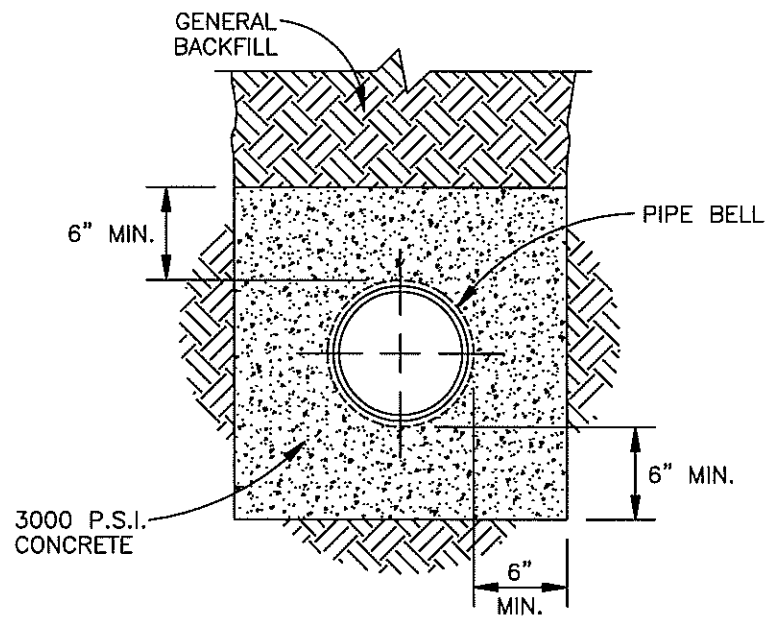


**SANITARY
SEWER SERVICE
LOCATION DETAIL**
(BY SEWER CONTRACTOR)

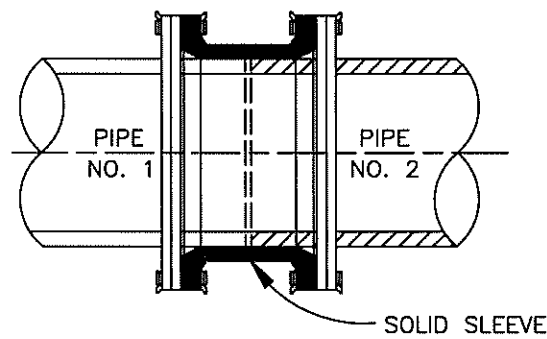


CLEANOUT DETAIL

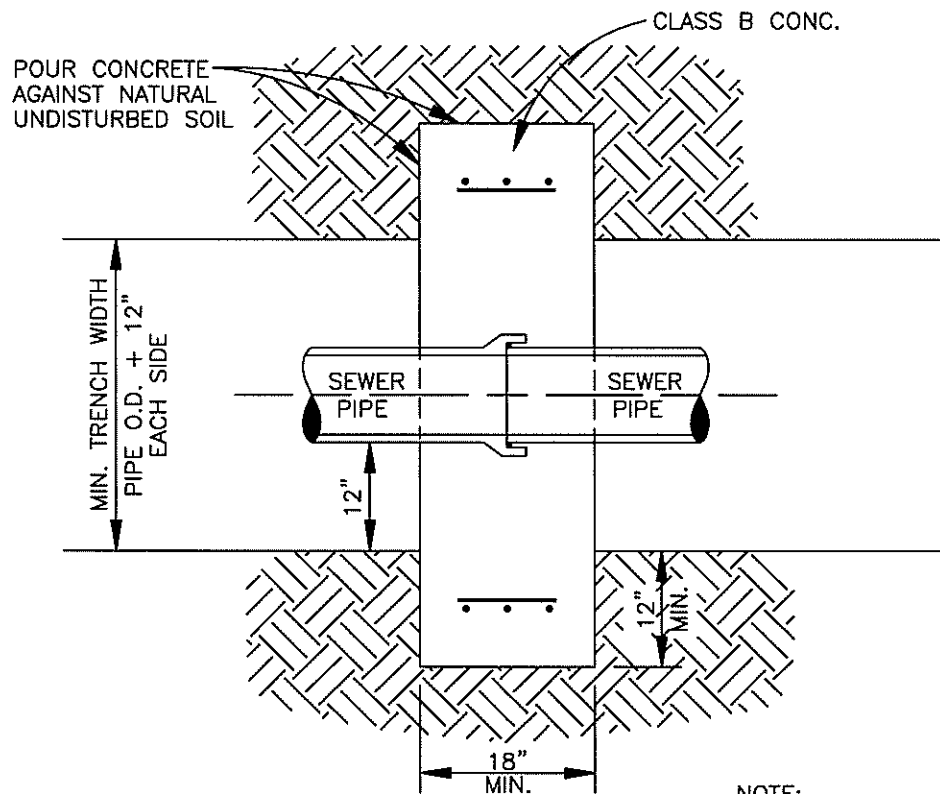
(BY BUILDER)



CONCRETE ENCASEMENT



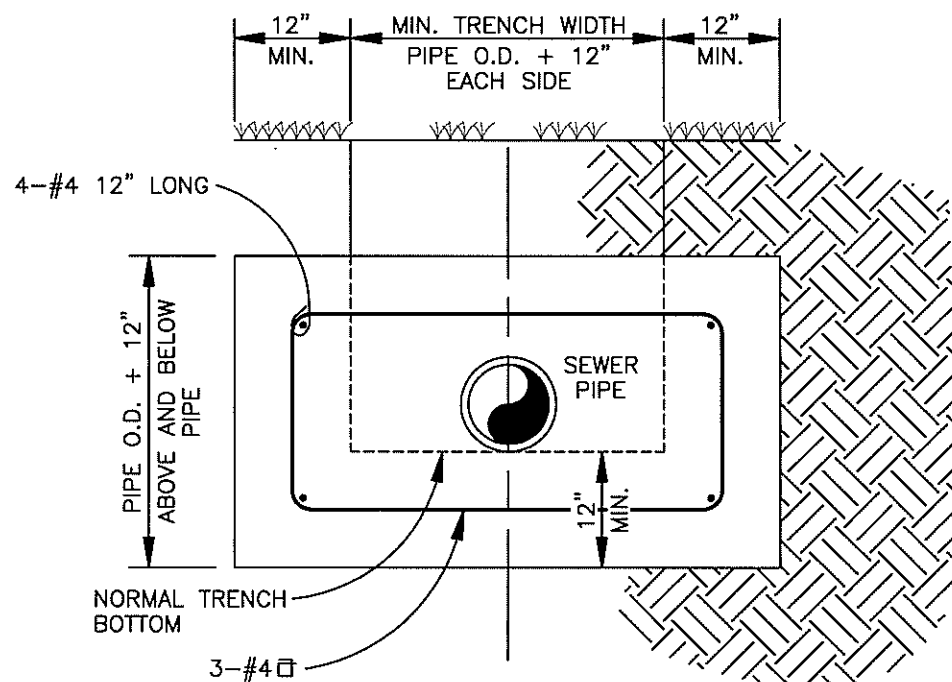
PIPE ADAPTER
JOINING DIFFERENT TYPES OF PIPE



NOTE:

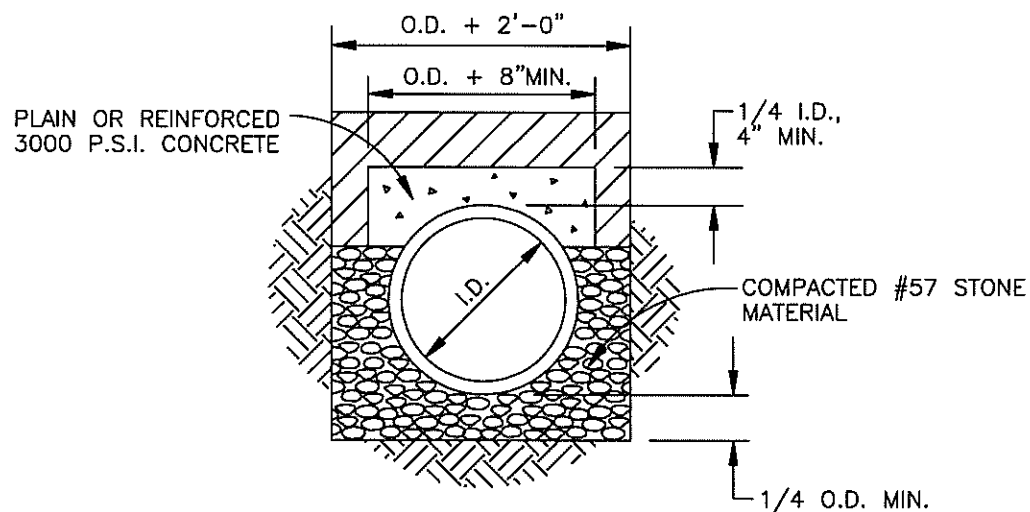
1. COLLAR REQUIRED AT EVERY PIPE JOINT.

PLAN

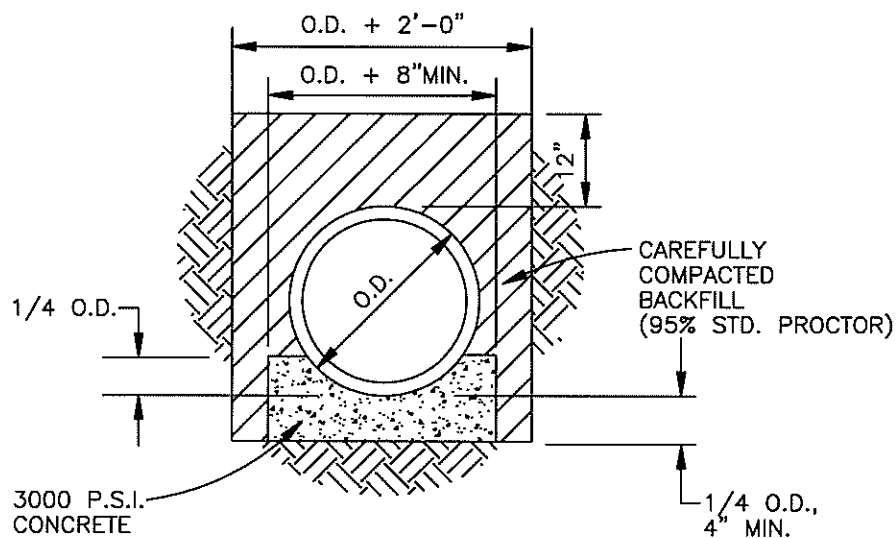


SECTION

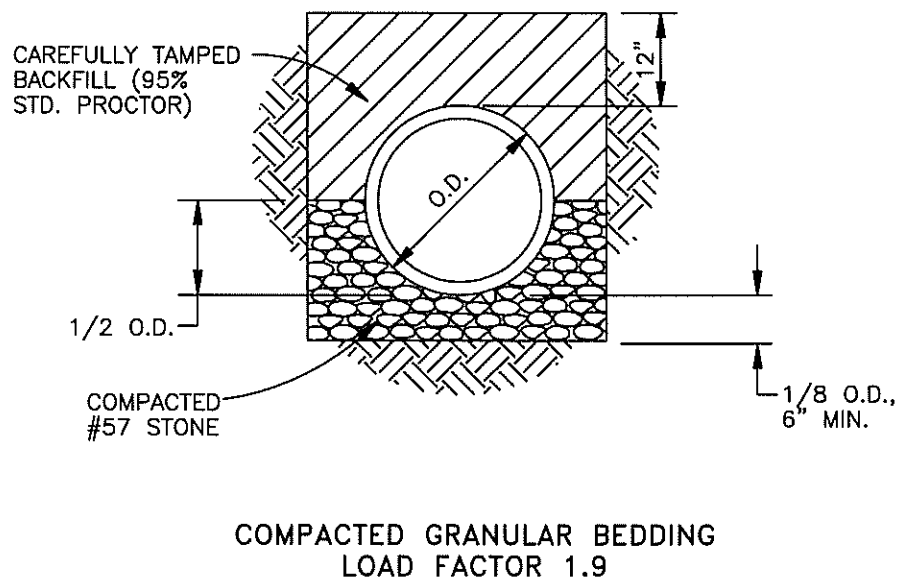
SEWER PIPE ANCHOR



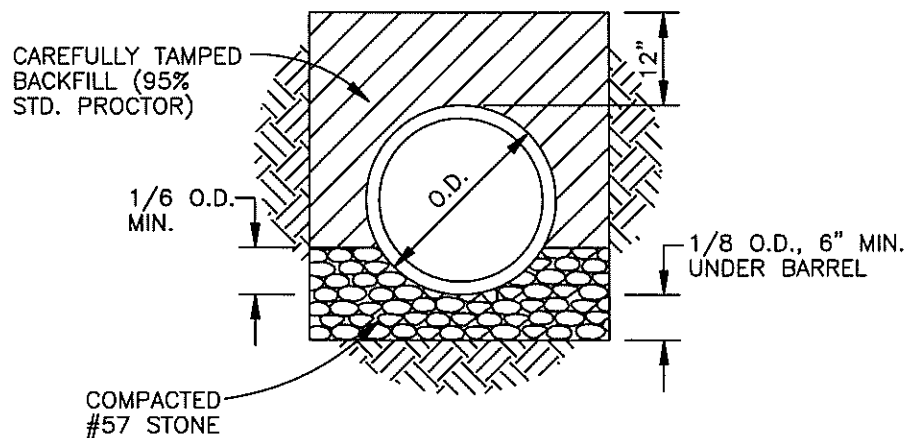
CONCRETE ARCH



CONCRETE CRADLE

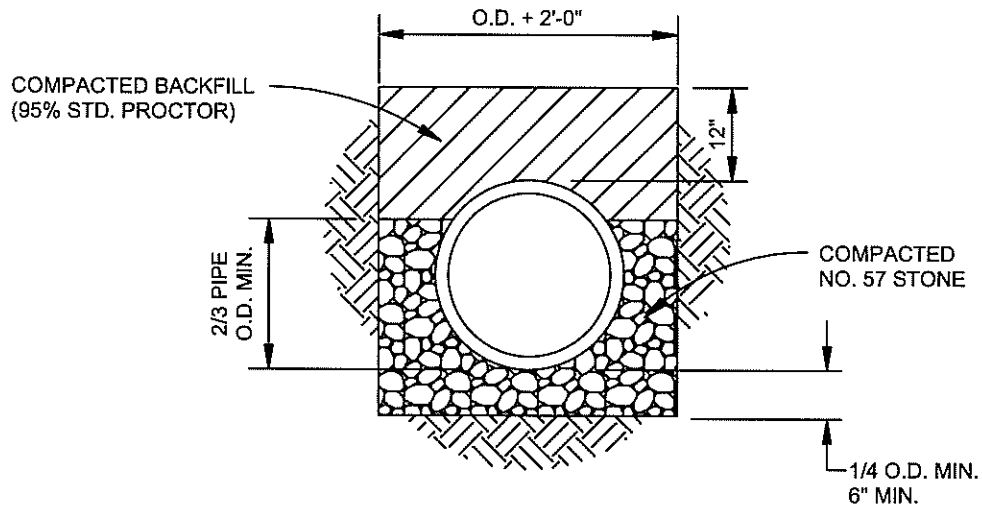


PIPE CLASS 'B' BEDDING

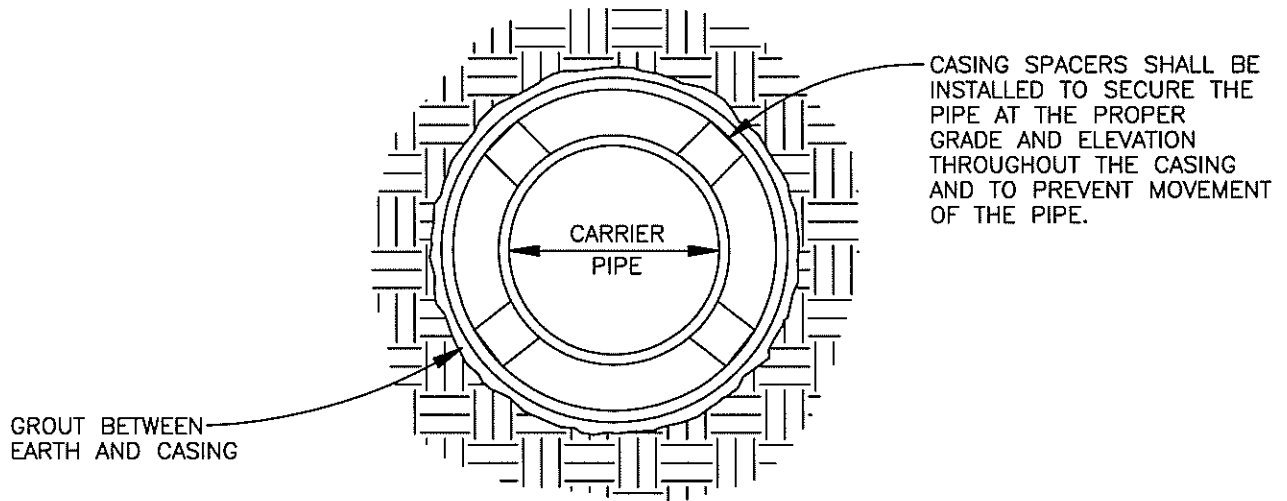


PIPE CLASS 'C' BEDDING

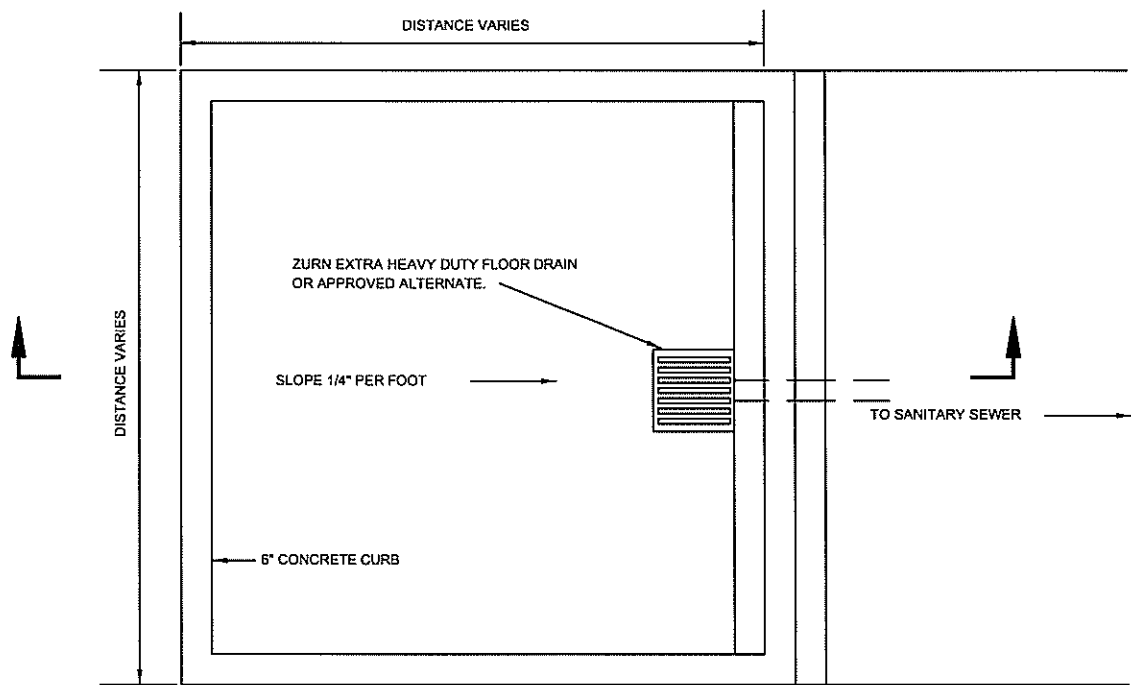
CLASS 'C' BEDDING IS THE MINIMUM BEDDING REQUIRED.
MORE STRINGENT BEDDING MAY BE REQUIRED BY MARIETTA WATER.



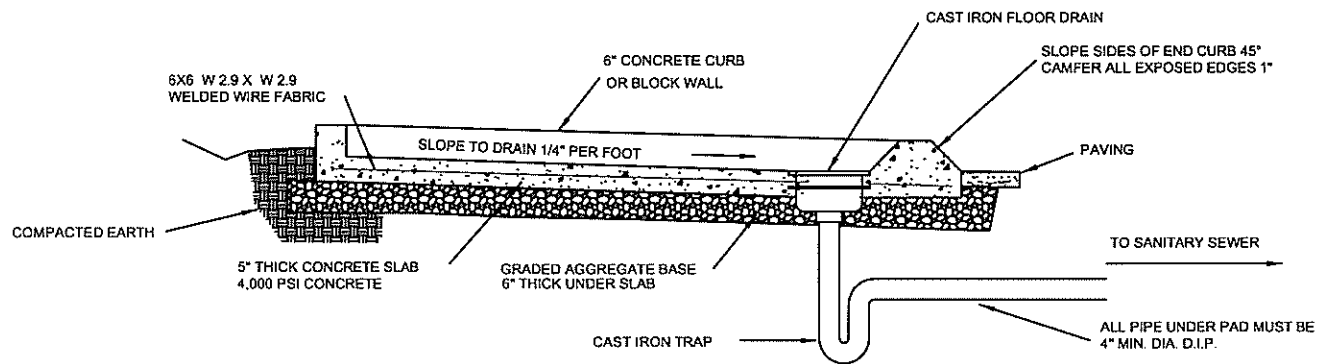
MINIMUM P.V.C. PIPE BEDDING DETAIL



CASING SPACER DETAIL



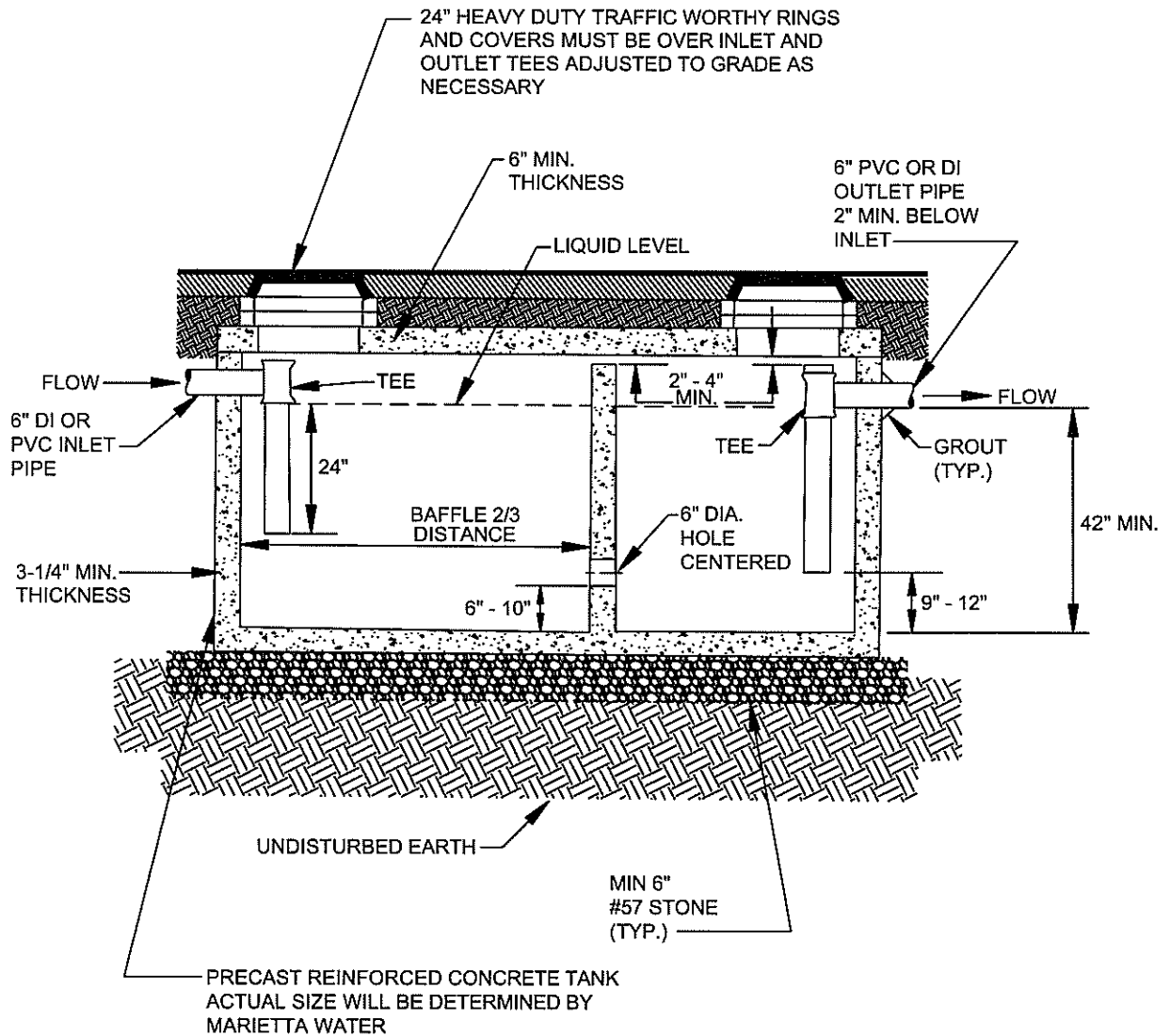
PLAN VIEW



SECTION VIEW

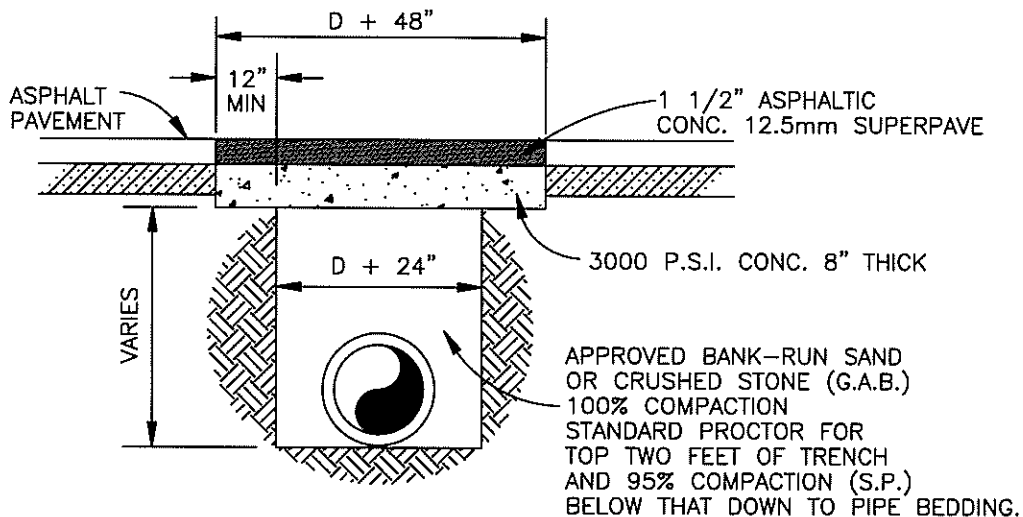
NOTES:

1. FLOW FROM DUMPSTER PAD SHALL BE ROUTED THROUGH GREASE TRAP IF APPLICABLE.
2. DUMPSTER AREA MUST BE COVERED AS OUTLINED IN SECTION 302.02.

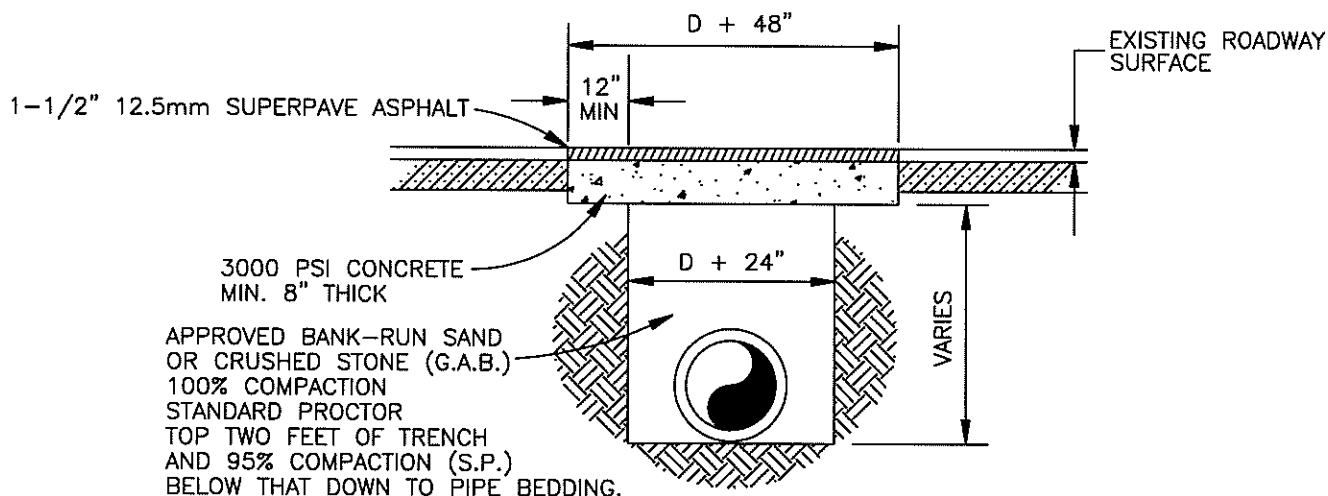
**NOTES:**

1. STAND ALONE TRAP REQUIRE 1,500 GALLON MINIMUM.
2. NON-STAND ALONE TRAPS ARE A 25 GALLON MINIMUM.
3. FOR NON-FOOD PREP DUMPSTER PADS ONLY:
300 GALLON MINIMUM SIZE AND 4" MINIMUM PIPE SIZE.
ONLY 1 MANHOLE REQUIRED AND NO BAFFLE REQUIRED.
4. INSPECTION BY MARIETTA WATER REQUIRED BEFORE COVERING.

GREASE TRAP DETAIL



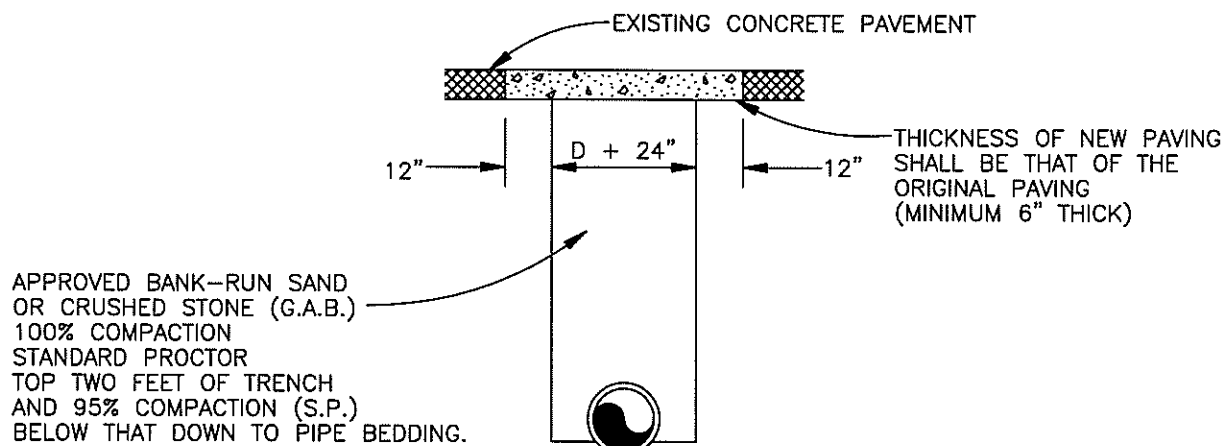
STATE OR STATE-AID ROADS



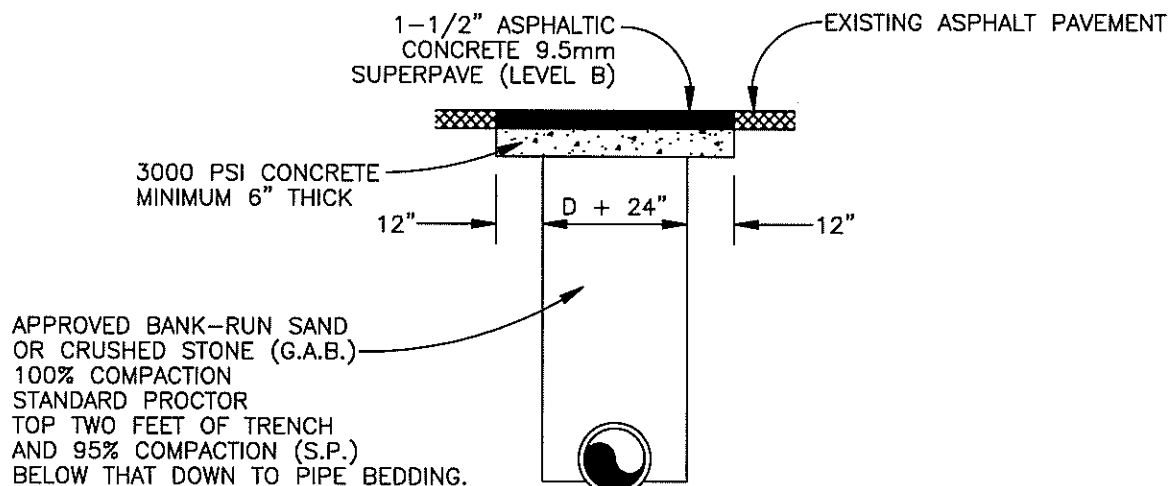
CITY OR COUNTY ROADS

NOTES:

1. PERMISSION MUST BE OBTAINED TO OPEN CUT EXISTING ROADS.
2. ROADWAYS WILL GENERALLY BE BORED OR TUNNELED FROM DITCH LINE TO DITCH LINE.
3. IF CONCRETE PAVEMENT, REPLACE WITH ORIGINAL THICKNESS (MINIMUM 8"), FLUSH WITH EXISTING PAVEMENT.
4. D = NOMINAL PIPE DIAMETER



CONCRETE DRIVEWAY



ASPHALT DRIVEWAY

NOTES:

1. BACKFILL TO BE COMPACTED AS DIRECTED IN SPECIFICATIONS.
2. D = NOMINAL PIPE DIAMETER

